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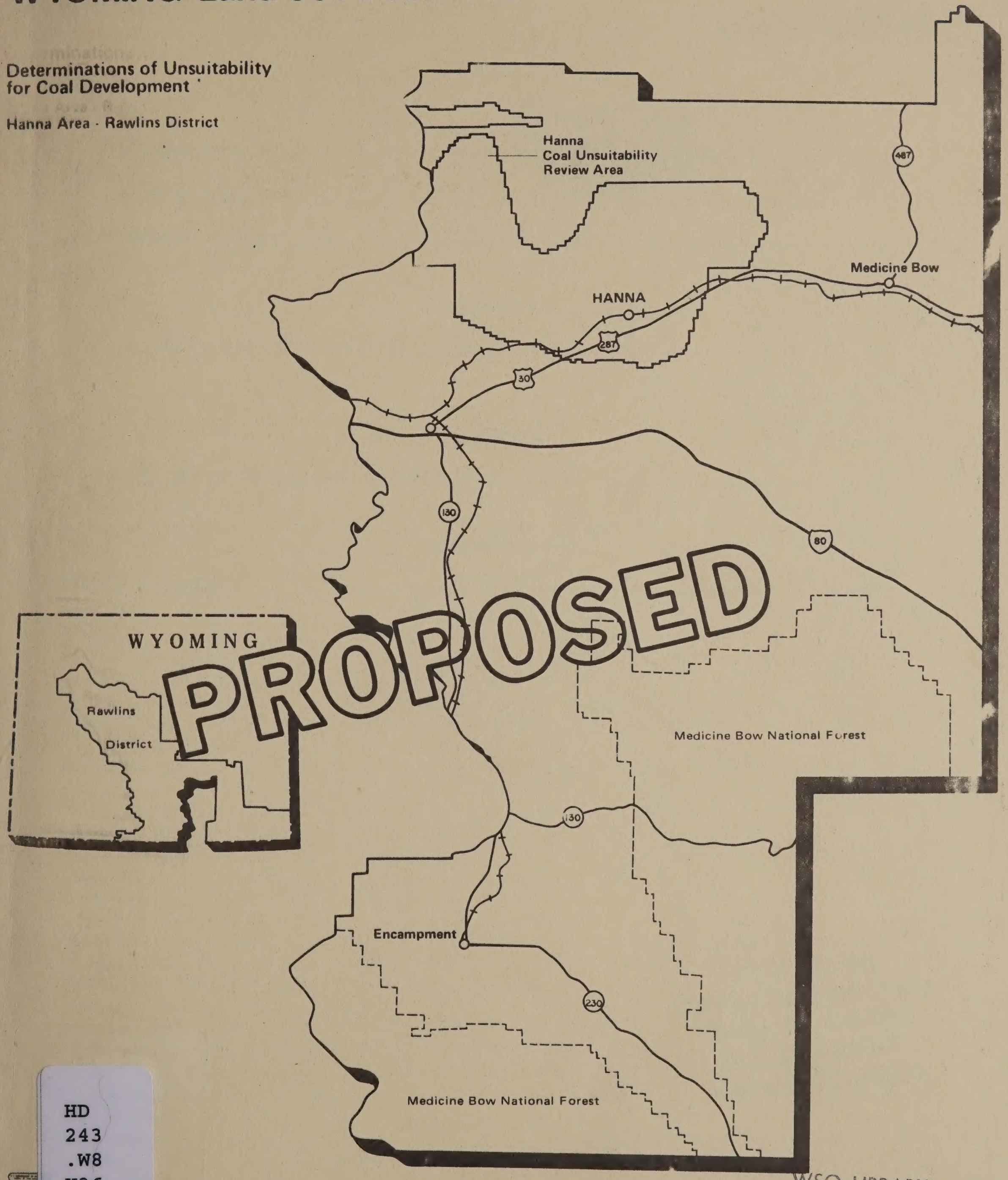
SUPPLEMENT TO
WYOMING Land Use Decisions

Determinations of Unsuitability for Coal Development

Hanna Area · Rawlins District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PROPOSED REVISIONS TO THE HANNA MFP LAND USE DECISIONS

CHAPTER 1

SUMMARY

INTRODUCTION

This document is a draft planning supplement to the Hanna Management Framework Plan (MFP). The land use planning decisions contained herein are proposed decisions that would not become final or adopted until after 1) the Secretary of the Interior has made a decision on the coal unsuitability criteria used in preparing this supplement; and 2) an opportunity for public hearings, if requested by any person(s) who will or may be adversely affected by one or more of the proposed decisions, if adopted, has been provided. Also, should the Secretary decide to change any of the coal unsuitability criteria, the proposed decisions are accordingly subject to change, before they would be made final and adopted.

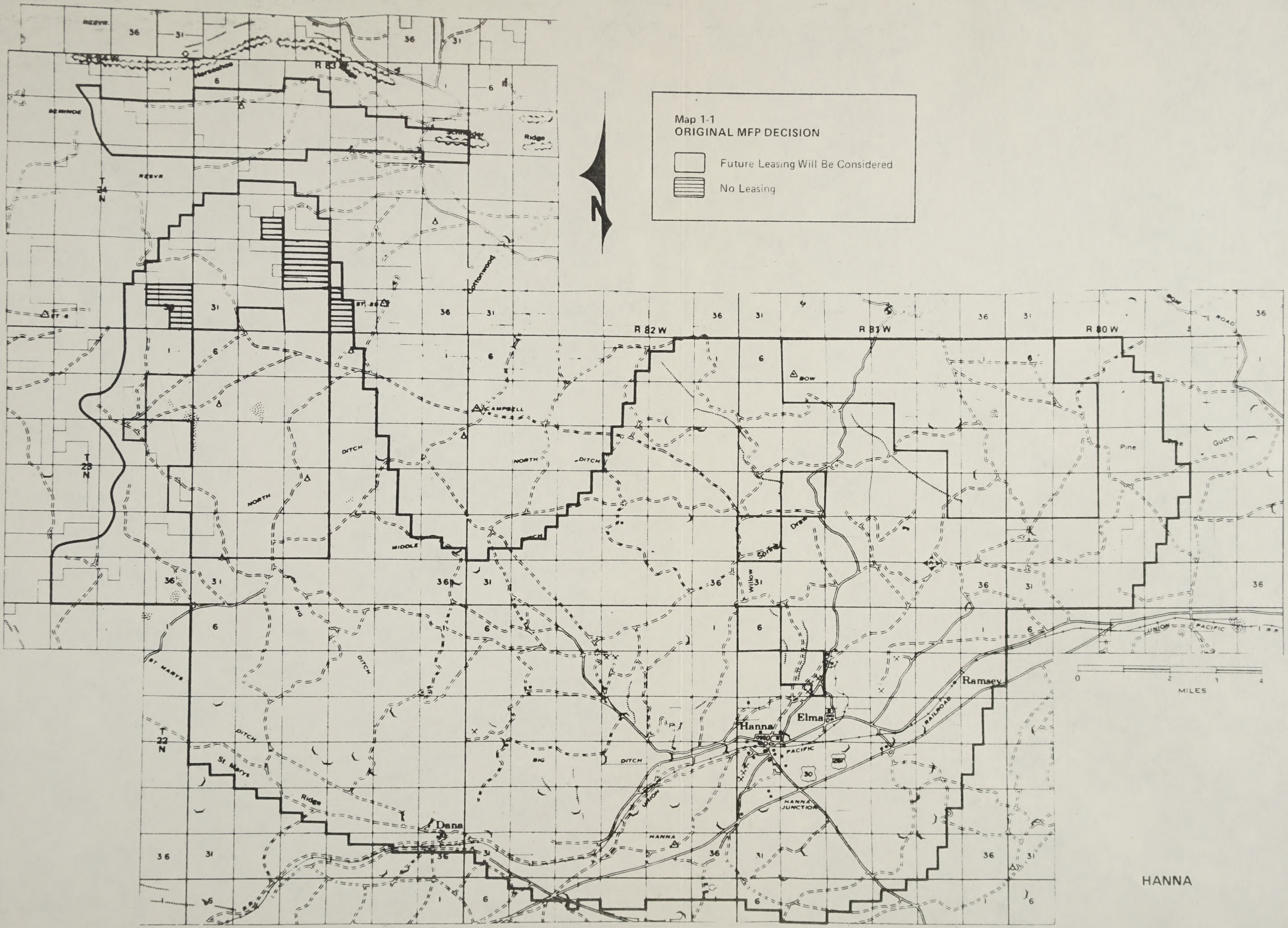
This planning supplement revises the multiple use decisions specifically addressing coal development in the Hanna Basin. The original planning decisions under which the coal program is currently managed are part of the 1977 Management Framework Plan (MFP) for the Hanna Planning Unit. Map 1-1 shows the original MFP decisions for the planning unit.

Revisions to MFP coal decisions reflect new information and are consistent with recent statutory requirements that affect coal development on federal lands. The Federal Land Policy and Management Act (FLPMA) of 1976 requires preparation of land use plans as a basis for allocation of resources on public lands. The Federal Coal Leasing Amendments Act (FCLAA) of 1976 requires that any coal leasing be based on a comprehensive land use plan or land use analysis. The Surface Mining Control and Reclamation Act (SMCRA) of 1977, commits the Secretary of the Interior to specific planning requirements. Specifically section 522(b) of SMCRA directs the Secretary to conduct a review of federal land to determine whether classes of federal lands should be designated unsuitable for surface coal mining operations or adverse surface effects of underground coal mining.

A principal part of the process for implementing the requirements of the federal land review mandated by SMCRA involves applying 24 interim coal unsuitability criteria to known recoverable coal resource areas. These criteria, developed by the Secretary, address resource considerations such as wilderness areas, scenic areas, natural and historic values, wildlife species and habitat, water resources, flood plains, alluvial valley floors, and prime farmlands. See Table 1-1 for a listing of the unsuitability criteria.

The revisions reflect both the application of the coal unsuitability criteria and other multiple use considerations. Chapter 2 contains the specific findings (narrative and maps) related to application of the criteria.

This planning supplement pertains only to the 70,000 acres of public land in the Hanna Basin area (Map 1-2) of the Hanna Planning Unit. Coal unsuitability criteria will be applied to the remaining known recoverable coal resource areas (KRCRA) within the planning unit no later than fiscal year 1986, at which time the Hanna MFP is scheduled for revision. However, this revision could occur sooner, should priorities for land use or development change. The Hanna Basin



RESVR
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R 83 W
Horseshoe
Schneider
Ridge
T 24 N
Cottonwood
R 82 W
R 81 W
R 80 W
Bow
Campbell
North
Ditch
Middle
Pine
Gulch
T 23 N
Sand Draw
Willow
Big
St Marys
Ridge
T 22 N
Hanna
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Ramsey
Dana
Union Pacific Railroad
Hanna Junction
30
287
0 1 2 3 4
MILES
HANNA

Map 1-1
ORIGINAL MFP DECISION

- ☐ Future Leasing Will Be Considered
- ▤ No Leasing

TABLE 1-1

Unsuitability Criteria*

1. Federal land systems, i.e., National Park System, National Wildlife Refuge System, National System of Trails, and the like.
2. Rights-of-way and easements.
3. Buffer zones along rights-of-way and adjacent to communities and buildings.
4. Wilderness study areas.
5. Scenic areas.
6. Lands used for scientific studies.
7. Historic lands and sites.
8. Natural areas.
9. Federally listed threatened and endangered species.
10. State listed endangered species.
11. Bald and golden eagle nests.
12. Bald and golden eagle roost and concentration areas.
13. Falcon cliff nesting sites.
14. High interest migratory birds.
15. High interest State resident fish and wildlife.
16. Wetlands.
17. Floodplains.
18. Municipal watersheds.
19. National resource waters.
20. State lands unsuitable (not available at this time).
21. State proposed criteria (not available at this time).
22. Prime farmlands.
23. Alluvial valley floors.
24. Reclaimability.

*Complete statements of the criteria and exceptions are contained in Chapter 2.

has been selected for review because of its close association with existing coal mining operations throughout the area and because it had been identified for potential coal development in the 1977 MFP. Five major companies are producing approximately 12 million tons of coal annually for markets in the East and Midwest. The coal is of relatively high quality with a high BTU and low sulfur content. Environmental impacts would be minimal due to the location of existing facilities (i.e., railroads, power, access), the checkerboard land pattern, and the type of wildlife habitat. Operating companies need 5 to 10 years lead time to extend their operations into new areas. A review of this area will also provide opportunities to extend existing operations should the Secretary decide to proceed with new federal coal leasing.

Within the Hanna Basin area, this planning supplement identifies areas unsuitable for further consideration for coal development as well as areas acceptable for further consideration should the Secretary decide to proceed with a federal coal leasing program. These determinations are the first step in a process which may lead to formal designations, by the Office of Surface Mining (OSM), of certain areas as unsuitable for either surface or underground coal mining due to their adverse surface affects. No specific sites (tracts) for coal development have been, or will be, identified in this planning supplement. Identification and delineation of tracts would occur only after adoption of a federal coal management program and a Secretarial decision to proceed with new federal coal leasing.

Area Description

The Hanna Basin is located in northcentral Carbon County (Map 1-2). The area extends from a line about 7 miles north of Interstate 80 on the south to the Medicine Bow River on the north, the Seminoe Reservoir on the west and 10 miles east of the town of Hanna. The land pattern is checkerboarded with alternate sections of private and federal lands. Topography varies from rolling hills to flat dry lake beds broken by moderate to steep draws. Sandstone bluffs are scattered throughout. Major features include the million acre-foot Seminoe Reservoir to the west and the Medicine Bow River to the north.

Vegetation is predominantly a grass-sagebrush type with scattered pockets of greasewood and saltbush. Total recoverable federal coal reserves in areas of interest exceed 33 million tons of high BTU, low sulfur coal.

The economy of the towns of Hanna, Elk Mountain, Saratoga, Medicine Bow, and Rawlins are heavily dependent upon the production of coal in the Hanna Basin.

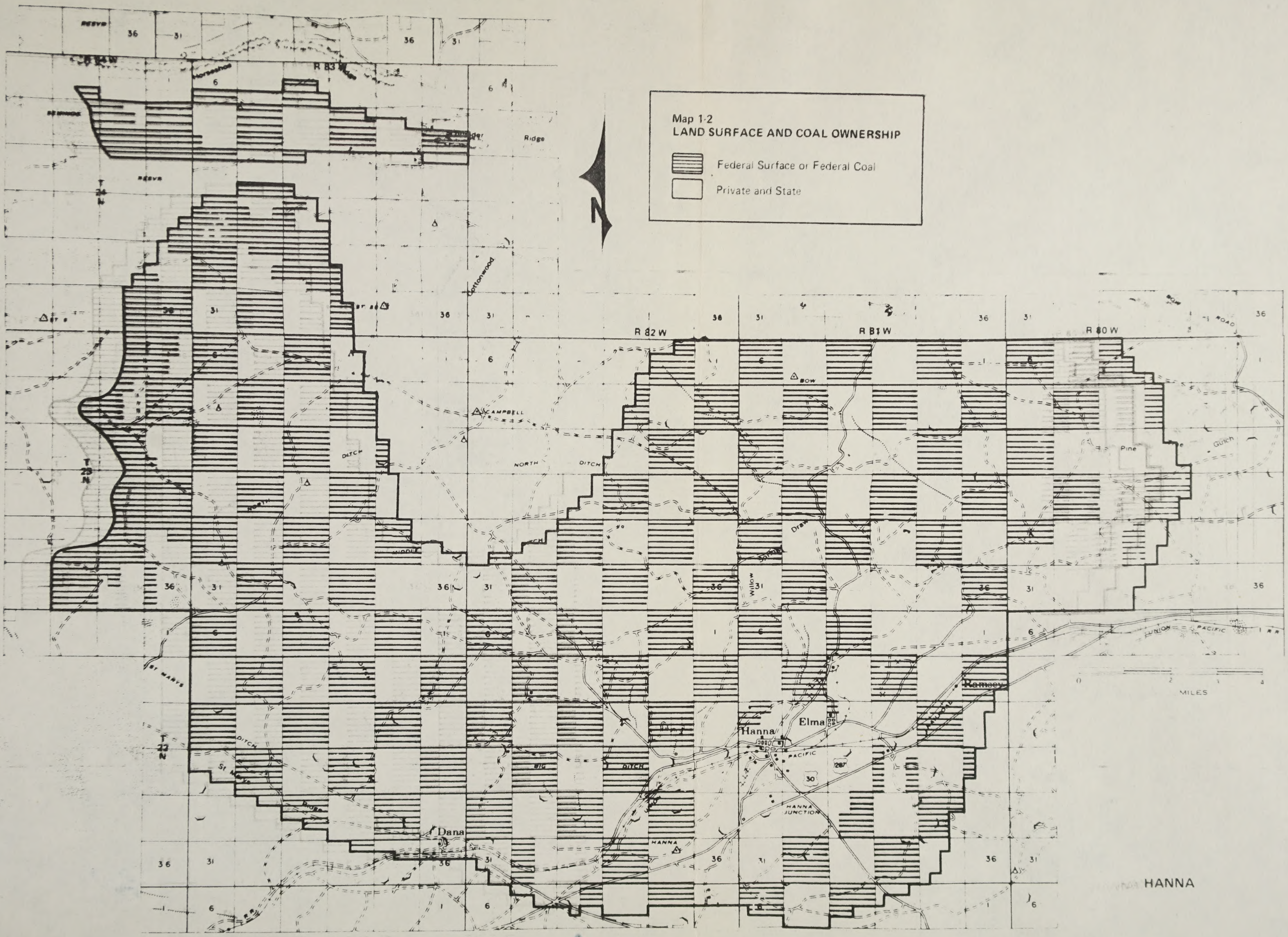
Original Coal Planning Decisions for Hanna Basin

The original multiple use decisions for coal development in the Hanna Basin (Map 1-1) are as follows:

1. Allow continued development of coal now under lease.

   Rationale: Contractual obligations.

2. Subject to findings of an environmental assessment, develop a schedule for development of the following leased tracts: Hanna South, Medicine Bow, and Seminoe I and II.


R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Horseshoe
Ridge
Cottonwood
CAMPBELL
BOW
NORTH DITCH
MIDDLE
BIG DITCH
ST MARYS
St Marys Ridge
Willow
Simpson Draw
Pine Gulch
UNION PACIFIC R R
PACIFIC
Hanna
Elma
Ramsey
Dana
HANNA JUNCTION
HANNA
287
30
0
2
4
MILES

Map 1-2
LAND SURFACE AND COAL OWNERSHIP

▤ Federal Surface or Federal Coal

☐ Private and State

HANNA

Rationale: Continue existing operations, supply existing and expanding markets, meet national needs without opening virgin areas, produce low sulfur coal and prevent bypass situations on checkerboard lands.

3. Do not lease tracts along the shoreline of Seminoe Reservoir and Medicine Bow River.

   Rationale: Prevent adverse effects on visual and water quality of these premium water resources. Riparian habitats are critical to wildlife (i.e., raptors, fish, big game).

Revision Summary

Application of unsuitability criteria and multiple use considerations, in arriving at the decisions listed in this planning supplement, has effected little change from the original 1977 decision (see Map 1-5). For protection of the Seminoe Reservoir and the Medicine Bow River, a 2,000-foot buffer zone has been maintained through an unacceptable and unsuitable determination. Six areas of ¼ mile radius are identified as unsuitable because of four raptor nesting sites, and two sage grouse strutting grounds. The rationale for these determinations is explained in detail in the Updated Plan section of this chapter.

Definition of Area Classifications

The multiple use decisions included in this planning supplement appear in the Updated Plan section. The decisions are based on designations defined as follows:

1. Unsuitable for further consideration for coal development based on unsuitability criteria. Unsuitable areas are governed by one or more of the unsuitability criteria and are not amenable to criteria exceptions. An example would be an area that contains active bald and golden eagle nests (criterion 11) and where disturbance during the breeding season cannot be controlled or nests cannot be moved (exceptions to criterion 11).

2. Unacceptable for further consideration for coal development based on multiple use considerations. Unacceptable areas are exempted from coal development due to multiple-use resource considerations.

3. Acceptable for further consideration for coal development. Acceptable areas are broken down as follows:

   a. Acceptable with no likely problems--defined as areas acceptable for further consideration for coal development, which were not excluded by application of unsuitablity criteria or multiple use considerations.

   b. Acceptable pending futher study--defined as areas where known values exist but their relationship to the unsuitability criteria cannot be defined without further specific information.

   c. Acceptable with inventory needs--defined as areas where inventory data relative to the unsuitability criteria is lacking.

Process

Incorporation of unsuitability criteria and development of the revised plan consisted of four discrete steps (see summary results in Table 1-2).

1. Unsuitability criteria, without exceptions, were applied to federal coal, regardless of surface ownership, availability of the coal, or coal development potential (Map 1-3).*

   *Instructions from Washington directed applying the criteria only to coal with high and moderate development potential. Since the coal data was incomplete, it was decided to apply the criteria regardless of coal development potential. As more data becomes available, the geographic application of criteria will be refined.

2. Multiple use values were considered to determine whether areas were acceptable or unacceptable for further consideration for coal development (Maps 1-3, 1-5).

3. On areas which were determined unsuitable by criteria, and acceptable by multiple use, further assessment was done through application of the criteria exceptions (Map 1-4).

4. Proposed Management Framework Plan decisions were then developed and summarized in a brochure for public comment (Map 1-5). The decisions were framed in the following terms.
   1) Unsuitable (by criteria) for further consideration for coal development.
   2) Unacceptable (by multiple-use) for further consideration for coal development.
   3) Acceptable for further consideration for coal development. This category contains three subcategories which are defined in the above section of this chapter.

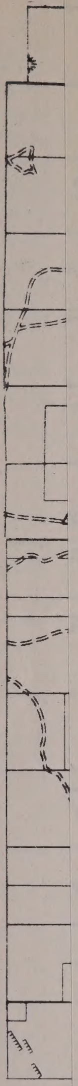
   Although this planning process was applied to all federal coal, no decisions were made where there was an existing federal coal lease. The criteria will be applied to existing leases, for which there is no pending or existing mining and reclamation plan, at such time as a plan is submitted.

Public Participation and Agency Coordination

Certain of the criteria required coordination, consultation, or concurrence with other federal and state agencies. Contacts were initiated in December 1978 and are continuing.*

*As of April 4, 1979 not all required consultation or concurrence has been achieved. Where specific actions are pending, they are discussed in Chapter 2. Final decisions will reflect all requirements of consultation, coordination, and concurrence.

A draft summary brochure of proposed MFP decisons was distributed to the public for review and comment on February 23, 1979. A public meeting and open house were held on March 14, 1979, to receive oral and written statements. Prior to and after the public meeting one-on-one meetings were held with various interested coal companies, land owners and county officials.



Process

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1. Unsuitability criteria, without exceptions, were applied to federal coal, regardless of surface ownership, availability of the coal, or coal development potential (Map 1-3).*
   *Instructions from Washington directed applying the criteria only to coal with high and moderate development potential. Since the coal data was incomplete, it was decided to apply the criteria regardless of coal development potential. As more data becomes available, the geographic application of criteria will be refined.

2. Multiple use values were considered to determine whether areas were acceptable or unacceptable for further consideration for coal development (Maps 1-3, 1-5).

3. On areas which were determined unsuitable by criteria, and acceptable by multiple use, further assessment was done through application of the criteria exceptions (Map 1-6).

4. Proposed Management Framework Plan decisions were then developed and summarized in a brochure for public comment (Map 1-7). The decisions were framed in the following terms:
   1) Unsuitable (by criteria) for further consideration for coal development.
   2) Unacceptable (by multiple-use) for further consideration for coal development.
   3) Acceptable for further consideration for coal development. This category contains seven subcategories which are defined in the above section of this chapter.

Although this planning process was applied to all federal coal, no decisions were made where there was an existing federal coal lease. The criteria will be applied to existing leases, for which there is no pending or existing mining and reclamation plan, at such time as a plan is submitted.

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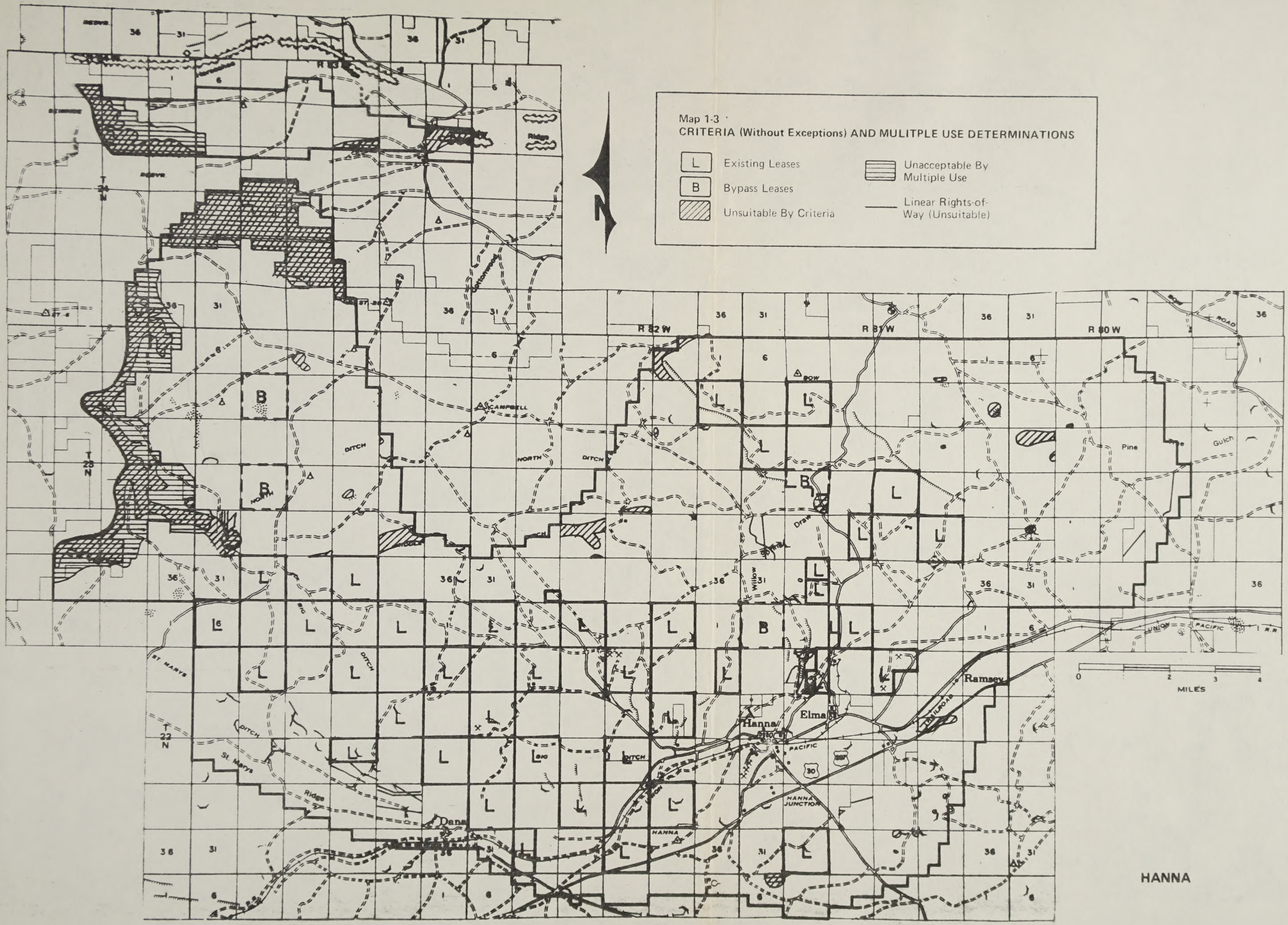
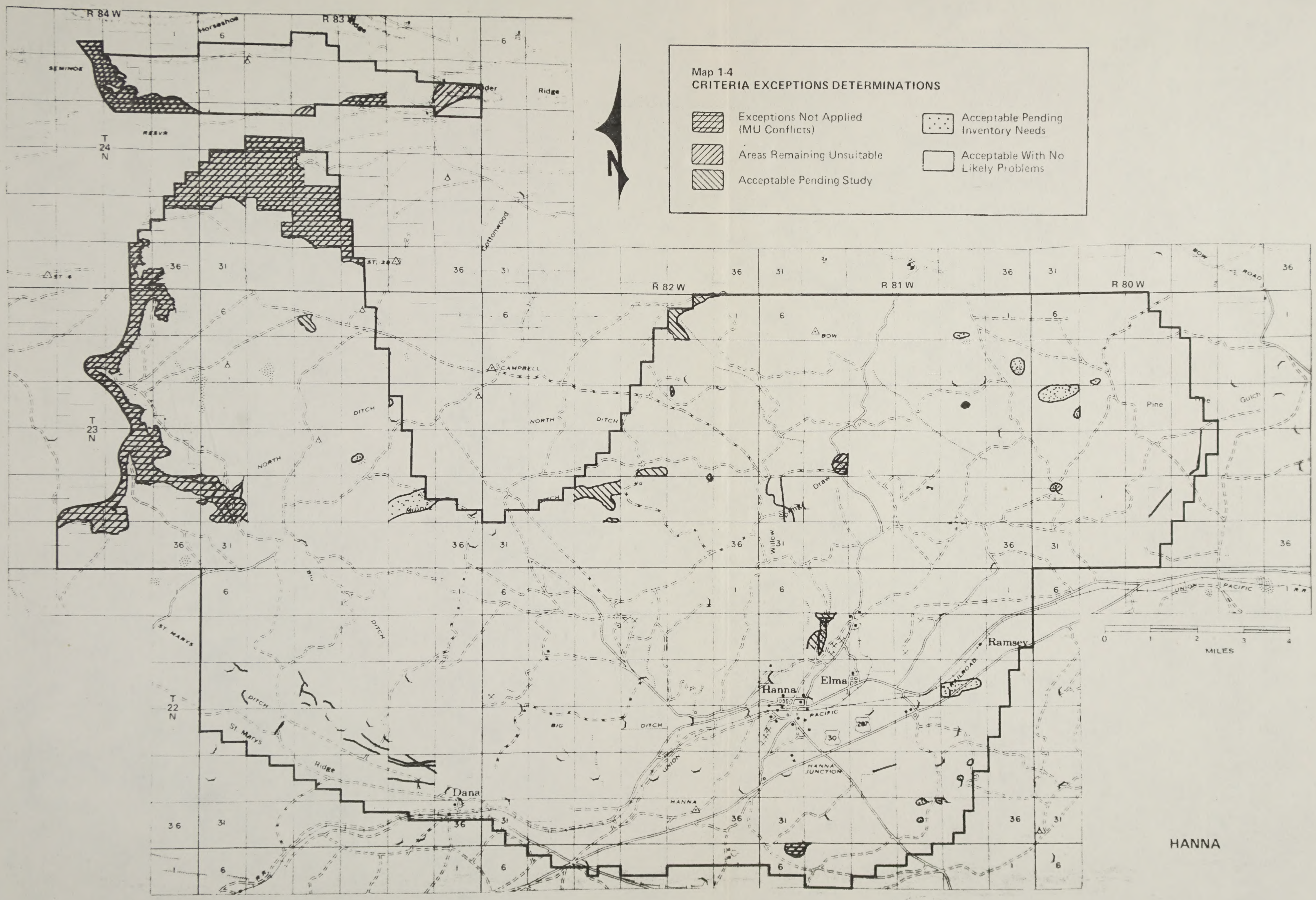


Map 1-3

CRITERIA (Without Exceptions) AND MULITPLE USE DETERMINATIONS

L Existing Leases
B Bypass Leases
▨ Unsuitable By Criteria
Unacceptable By Multiple Use
Linear Rights-of-Way (Unsuitable)
N
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Campbell
North Ditch
Ditch
Big Ditch
St. Marys Ditch
St. Marys Ridge
Willow
Draw
Pine Gulch
Bow
Road
Union Pacific R.R.
Ramsey
Railroad
Hanna
Elma
Hanna Junction
Dana
Pacific
30
0 1 2 3 4
MILES
HANNA



Map 1-4
CRITERIA EXCEPTIONS DETERMINATIONS

Exceptions Not Applied (MU Conflicts)
Areas Remaining Unsuitable
Acceptable Pending Study
Acceptable Pending Inventory Needs
Acceptable With No Likely Problems
N
R 84 W
R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Horseshoe
Ridge
Seminoe
Resvr
Cottonwood
Campbell
North
Ditch
Bow
Pine
Gulch
Bow Road
Willow
Draw
Union Pacific R R
Ramsey
Elma
Hanna
Pacific
Railroad
30
287
Hanna Junction
Big
Ditch
Union
St Marys
Ridge
Dana
0 1 2 3 4
MILES
HANNA

The public (governmental agencies, organizations, and industry) expressed concern over the short time frame for their participation in the process. Most of the public comment has been critical of this exercise. The Governor of Wyoming has questioned the adequacy of the inventory data, the level of consultation with the state, and the application of the criteria. Industry has challenged the total process with respect to their involvement, economic considerations, and multiple use priorities (i.e., coal versus other resource values). The Sierra Club has questioned the legality of the process, the Wyoming Outdoor Council is concerned with over-application of the exceptions, and land or surface owners are concerned with the impact of the federal determinations on adjacent private lands.

Appendix 1 contains the letters, comments, and attendance lists and transcript of the public meeting. Public comments, where they relate to specific criteria, are contained in Chapter 2.

May 1, 1979

UPDATED HANNA PLAN

The revisions to the original multiple use decisions for coal development are shown on Map 1-5 and are listed below with rationale for the proposal. Acceptable areas may be further considered for coal development.

Multiple Use Decision

1. Areas identified on Map 1-5 as acceptable pending study and acceptable with inventory needs, are available for further consideration for coal development. These areas would be subject to the following, it it is determined by the Secretary that new federal coal leasing is necessary.

   a. Tract delineation, ranking, and selection.

   b. Findings of an environmental assessment.

   c. Further study in buffer zones around areas identified as unsuitable.

   d. Inventory for endangered species and other wildlife considerations (i.e., raptors, sage grouse nesting and winter areas).

   e. Demonstration that reclamation is possible to a degree necessary to restore disturbed areas to a productive state for wildlife and for livestock.

   f. Disturbance of areas only to the degree necessary for further coal development.

   g. An effective air and water pollution abatement program that would assure compliance with applicable state and federal quality standards.

   ### Rationale

   The area lies within a KRCRA and contains workable, economically recoverable coal deposits. The coal is generally of high quality due to a low sulfur content (0.2%-1.1%) and a favorable BTU rating (8,500-11,500 BTU/Ton).

   The area lies within a checkerboard land and coal ownership pattern where every other section is privately owned. Failure to develop federal coal in the near future could result in bypass situations. Availability of federal coal would greatly enhance economic recovery (private and federal) and facilitate logical mining plans.

   Development of federal coal would provide for extension of existing mining operations. Such coal development would extend mining life, supply existing contracts and markets, and make efficient use of in-place overhead (i.e., railroads, powerlines, equipment, etc.).

Coal could be produced from this existing mining area with a minimum of pre-production requirements to immediately supply national energy needs.

Coal could be produced from the acceptable areas in such a manner that the majority of adverse impacts could be mitigated.

2. Do not allow coal development in those areas identified on Map 1-5 as unsuitable by the criteria.

Chapter 3 contains an analysis on the effects of excluding areas based on application of the unsuitability criteria.

Portions of the areas identified as unsuitable could become acceptable if underground mining were the main method proposed for coal extraction.

Rationale

The following areas were found unsuitable after application of the unsuitability criteria and exceptions. See Table 1-1 for a listing of the unsuitability criteria.

a. An area of approximately 40 acres, containing occupied buildings (unsuitability criterion 3).

b. An area of approximately 5 acres, containing a gauging station (unsuitability criterion 6).

c. An area containing historic sites generally located in T. 23 N., R. 84 W., Section 34, N½N½; Section 26, SW¼SW¼ (unsuitability criterion 7).

d. Three raptor (falcon and eagle) nests scattered throughout the Hanna Basin area (unsuitability criterion 11 and 13).

e. An area of approximately 110 acres, containing sage grouse strutting grounds (unsuitability criterion 15).

f. Area immediately adjacent to the east shoreline of Seminoe Reservoir, Medicine Bow River, and Austin Creek (unsuitability criterion 16).

g. Area adjoining Medicine Bow River and Austin Creek (unsuitability criteria 17 and 23).

3. Do not allow coal development in those areas identified on Map 1-5 as unacceptable because of multiple use conflicts.

Rationale

Areas adjacent to Seminoe Reservoir. Seminoe Reservoir is a premium water resource, intensely used for water-related recreation. Strip mining within a buffer zone of 2,000 feet from the lake shore would result in permanent visual intrusions to the rugged and scenic shore lands. The bluffs along the reservoir are also prime habitat for bald and golden eagles and other raptors. Mining within the prescribed buffer strip would produce sheet and wind erosion affecting both air and water quality. Sedimentation of the reservoir would impact the fisheries, the quality of water sports, and the

life of the dam. This is also consistent with Carbon County land use planning provisions for protection of scenic values.

Areas adjacent to Medicine Bow River. The river flows into Seminoe Reservoir within the subject areas. Mining within a 2,000 foot buffer zone would destroy riparian zones, eagle and other raptor habitat, cause sedimentation, and destroy scenic values. This is also consistent with Carbon County land use planning provisions for protection of scenic values.

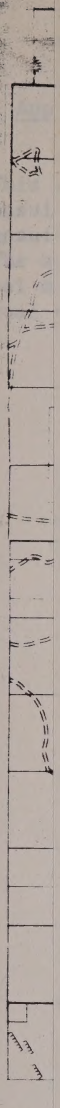
SUMMARY RESULTS

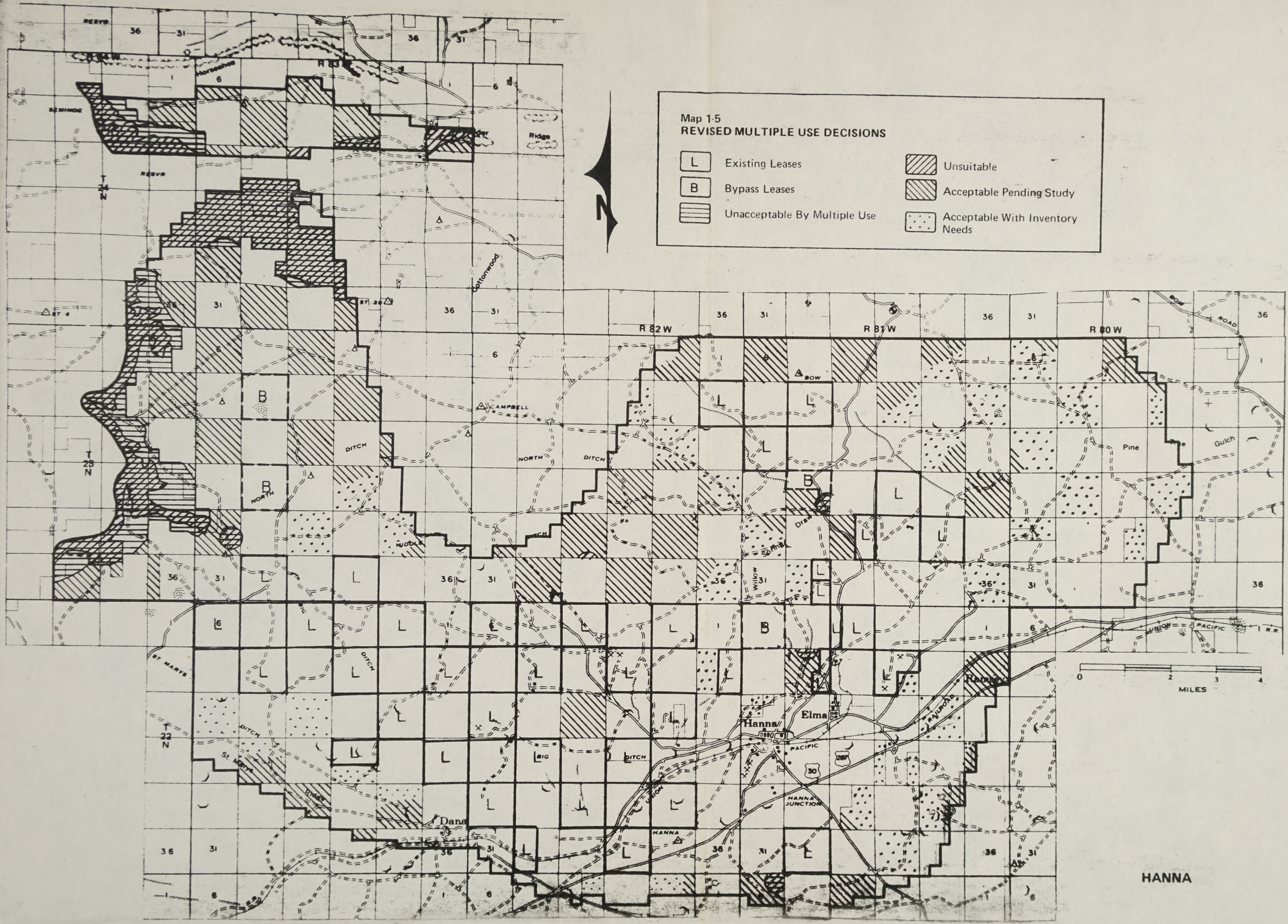
The summary results of the application of the coal unsuitability criteria and multiple use considerations are shown in Table 1-2.

Table 1-2 (Map 1-5)

Hanna Basin Review Area

	Acres	% of Total Acres	Tons	% of Total Coal Reserves
Unsuitable by Criteria	6,446	14	4,589,552	14
Unacceptable by Multiple Use	9,765	21	6,952,680	21
Acceptable by Criteria	40,384	86	28,753,408	86





Map 1-5

REVISED MULTIPLE USE DECISIONS

L Existing Leases
B Bypass Leases
Unacceptable By Multiple Use
Unsuitable
Acceptable Pending Study
Acceptable With Inventory Needs
N
R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Horseshoe
Ridge
Cottonwood
Campbell
North
Ditch
Middle
Big
St Marys
Bow
Road
Pine
Gulch
Draw
Willow
Union
Pacific
R R
Railroad
Hanna
Elma
Hanna Junction
Dana
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MILES
HANNA

CHAPTER 2

Application of the Unsuitability Criteria--Hanna Basin Review Area

HANNA BASIN

This chapter includes narratives and maps which show the results of applying the unsuitability criteria. The following narratives for each criterion address the unsuitability determinations, data sources, and application of the exceptions. The associated maps are located at the end of this chapter. They include individual maps for applicable criteria and maps showing coal resource occurrence and coal development potential (Maps 2-11, 2-12).

1. Federal Land Systems

CRITERION

All federal lands included in the following land systems or categories and an appropriate buffer zone, if necessary, as determined by the land management agency, shall be considered unsuitable for coal mining: National Park System, National Wildlife Refuge System, National Systems of Trails, National Wilderness Preservation System, National Wild and Scenic Rivers System, National Recreation Areas, and other federally purchased recreation lands, Custer National Forest, and federal lands in incorporated cities, towns, and villages. All federal lands which are recommended for inclusion in such systems or categories by the Administration in legislative proposals submitted to the Congress or which are required by statute to be studied for inclusion in such systems or categories shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Land status maps and Master Title Plats were checked to determine if any of the items in the criterion were applicable. None of the items stated were found.

Findings

There are no national systems, no incorporated cities, towns, or villages contained within the proposed area.

Data Sources and Quality of Data

Data sources were land status maps and Master Title Plats. These sources are considered to be current and are the best data sources available.

Unsuitability Determination

All of the area is determined to be acceptable with no likely problems. This encompasses 46,830 acres of federal land and 33,342,960 tons of federal coal.

EXCEPTION

A lease may be issued for underground coal mining within the Custer National Forest with the consent of the Department of Agriculture.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

The exception does not apply.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

2. Rights-of-Way and Easements (Map 2-1)

CRITERION

Federal lands that are within rights-of-way and easements and within surface leases for residential, commerical, industrial, public purposes, and agricultural crop production on federally-owned surface shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	6,400	4,556,800
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	40,430	28,786,160

*Assuming an average of 712 tons/acre.

Process

Rights-of-way for powerlines, telephone lines, pipelines, railroads and roads as well as surface leases include a special land use permit for a train loadout facility in Section 20, T. 22 N., R. 83 W., and a mineral material site in Section 10, T. 22 N., R. 81 W. These were located using the Master Title Plat and Hanna URA, Step 3, and then plotted on USGS 7½ minute quadrangle maps and overlays.

Findings

The above unsuitable areas are plotted on the work map overlays and are considered unsuitable for coal development.

Data Sources and Quality of Data

Master Title Plat, Historical Index, Hanna URA and USGS 7½ minute quadrangle maps. The data are considered up-to-date and reliable.

Unsuitability Determinations

All the lands identified on the work map overlay as being within rights-of-way and surface leases are considered unsuitable for coal development.

EXCEPTIONS

A lease may include such areas if the land management agency determines that:

1. Coal development (e.g., underground mining) will not interfere with the purpose of the right-of-way or easement, or

2. The right-of-way or easement was granted for mining purposes, or
3. The right-of-way or easement was issued for a purpose for which it is not being used, or
4. The parties involved in the right-of-way or easement agree to leasing, or
5. It is impractical to exclude such areas due to the location of coal and method of mining and such areas can be protected through use of appropriate stipulations.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

If areas are leased, the roads, railroads, powerlines, telephone lines, and pipelines could be relocated to facilitate coal development. In many cases, these rights-of-way were granted for mining purposes. Special land use permits and mineral material sites are revocable at any time upon notice and at the discretion of the authorized officer of the BLM, if it is determined the land should be devoted to another use.

Findings

After application of the exceptions, all public lands under this criterion are determined to be acceptable with no likely problems.

Data Sources and Quality of Data

BLM's Master Title Plat and Hanna Planning Unit Resource Analysis.

Unsuitability Determinations

After application of this criterion and the exceptions, all public lands identified as being within rights-of-way and surface leases are determined to be acceptable with no likely problems.

PUBLIC COMMENT

No public comments were received relative to application of this citerion.

3. Buffer Zones Along Rights-of-Way and Adjacent to Communities and Buildings (Map 2-1)

CRITERION

Federal lands affected by section 522(c) of the Surface Mining Control and Reclamation Act shall be considered unsuitable for coal mining. This includes land within 100' outside of the right-of-way of a public highway or within 100' of a cemetery, and within 300' of an occupied building, school, church, community or institutional building, or public park or within 300' of an occupied dwelling.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	135	96,120
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,495	33,104,440

*Assuming an average of 712 tons/acre.

Process

The above criterion was applied using the Master Title Plat, Historical Index, and USGS 7½ minute quadrangle maps.

Findings

Public rights-of-way include U.S. Highway 30 (case files W-04818, 150 feet; and W-04313, 150 feet) and Wyoming Highway 72 (case file C-063849, 100 feet).

T. 22 N., R. 81 W.
Sections 12, 14, 22--U.S. Highway 30
(approximately 2 miles)

T. 22 N., R. 81 W.
Sections 28, 34--Wyoming Highway 72
(approximately 0.2 miles)

The only occupied buildings within the Review Area are located in T. 24 N., R. 83 W., Section 10, SE¼SW¼. These buildings are on the old Annala Ranch presently owned and operated by Victor Anderson. Another building borders the Review Area boundary on the Matson Ranch in Section 12, SW¼NW¼. In both instances, the buildings are on private surface with the coal reserved to the federal government.

There are no public cemeteries, schools, churches, community or institutional buildings, or public parks on public lands (surface and/or mineral estate).

Data Sources and Quality of Data

BLM's Master Title Plat, Historical Index, Hanna URA--Step 3, and USGS 7½ minute quadrangle maps.

Unsuitability Determinations

Approximately 95 acres of public land within 100 feet outside of the public highway rights-of-way are considered unsuitable for coal development. Also, approximately 40 acres within 300 feet of the occupied buildings are unsuitable for coal development. All the remaining public lands are determined to be acceptable a with no likely problems.

EXCEPTIONS

A lease may include mine access roads or haulage roads that join the right-of-way for a public road. Additionally, the Surface Mining Regulatory Authority may issue a permit to have public roads relocated. Finally, owners of occupied buildings may give permission to mine near the buildings.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	40	28,480
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,790	33,314,480

*Assuming an average of 712 tons/acre.

Process

In most cases, states permit relocation of public highways. The area within the 300 foot buffer zone surrounding the buildings on the Annala and Matson Ranches is unsuitable by criterion and unacceptable by multiple use; therefore the above exception does not apply.

Findings

The land within 100 feet of public highways (approximately 95 acres) is determined to be acceptable with no likely problems. The above identified 300 foot buffer zone around the occupied buildings would remain unsuitable. This includes approximately 40 acres in SE¼SW¼, Section 10, and SW¼NW¼, Section 12, T. 25 N., R. 83 W.

Data Source and Quality of Data

BLM's Master Title Plat, Historical Index, Hanna URA--Step 3, and USGS 7½ minute quadrangle maps. The existing data are considered adequate for this purpose.

Unsuitability Determinations

After application of this criterion and the exceptions, all the public lands are determined to be acceptable with no likely problems, except for a 300 foot buffer zone around existing occupied buildings.

T. 24 N., R. 83 W., 6th P.M., Wyoming
Section 10, SE¼SW¼
Section 12, SW¼NW¼
(approximately 40 acres)

The above described public lands would remain unsuitable for coal development.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

4. Wilderness Study Areas

CRITERION

Federal lands designated as wilderness study areas shall be considered unsuitable for coal mining while under review by the Administration and the Congress for possible wilderness designation. For any federal land which is to be leased or mined prior to completion of the wilderness inventory by the land management agency, the environmental impact statement (or analysis) of the lease sale or mine plan must consider whether the land possesses the characteristics of a wilderness study area. If the finding is affirmative, the land shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Available information in the wilderness inventory was utilized to make the judgement.

Findings

There are no wilderness study areas in the Hanna Basin area, and because of the checkerboard land ownership pattern, no possibility exists for such areas. As a result, the entire area is determined to be acceptable with no likely problems.

Data Sources and Quality of Data

The staff of the Rawlins District BLM conducted a wilderness inventory during the winter of 1978-79. The quality of the data is believed to be completely adequate.

Unsuitability Determinations

No areas were determined to be unsuitable.

EXCEPTION

Issuance of noncompetitive coal leases and mining on leases may proceed if authorized by the Wilderness Act and the Federal Land Policy and Management Act of 1976.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

No areas were determined to be unsuitable.

PUBLIC COMMENT

No public comments were received relative to application of this criterion since there are no wilderness values within the Hanna Basin Review Area.

5. Scenic Areas

CRITERION

Scenic federal lands designated by visual resource management analysis as Class I or II (areas of outstanding scenic quality and/or high visual sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Visual resource management (VRM) overlays were examined to determine if any Class I or Class II areas lie within the boundaries of the Review Area.

Findings

No Class I or Class II scenic areas are found in the area. Therefore the entire area is determined to be acceptable with no likely problems.

Data Sources and Quality of Data

Rawlins District BLM personnel prepared VRM overlays in the summer of 1978. The quality of available data is adequate.

Unsuitability Determinations

No areas were determined to be unsuitable.

EXCEPTION

A lease may be issued if the land management agency determines that coal mining will not significantly diminish or adversely affect the scenic quality of the designated area.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

No areas within the Review Area were found to be unsuitable.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

6. Lands Used for Scientific Studies (Map 2-2)

CRITERION

Federal lands under permit by the land management agency, and being used, for scientific studies involving food and fiber production, natural resources or technology demonstrations and experiments shall be considered unsuitable for mining and shall be excluded from coal leasing.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	5	3,560
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,825	33,339,400

*Assuming an average of 712 tons/acre.

Process

Master Title Plats and water resource maps were examined to find any areas withdrawn for scientific studies or for gauging stations. The district Energy Mineral Rehabilitation Inventory and Analysis (EMRIA) coordinator confirmed the existence of an EMRIA study on a plot which is on an existing coal lease.

Findings

There are three gauging stations located in the Hanna Basin Review Area:

1. T. 23 N., R. 83 W., Section 19, NW¼SE¼SW¼ (private)
2. T. 23 N., R. 83 W., Section 30, SE¼SE¼NW¼ (federal)
3. T. 22 N., R. 81 W., Section 21, NE¼NW¼SE¼ (private)

One scientific study plot is located on public land but is already leased for coal. It is an active EMRIA study plot in T. 22 N., R. 81 W., Section 10, SW¼NE¼.

Data Sources and Quality of Data

Master Title Plats, surface water resource maps, and personal communication with the disrict EMRIA coordinator were the sources. Quality of the data is excellent and current.

Unsuitability Determinations

Only the gauging station in T. 23 N., R. 83 W , Section 30, is determined to be unsuitable, since the other sites are private coal or leased federal coal. All other areas are determined to be acceptable with no likely problems.

EXCEPTIONS

A lease may be issued:

1. With the concurrence of the principal scientific user or agency, or
2. Where the mining could be done in such a way as not to jeopardize the purpose of the study as determined by the land management agency.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	5	3,560
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,825	33,339,400

*Assuming an average of 712 tons/acre.

Process

It was determined that moving a gauging station is not feasible because it would affect the record of previous data and because all other locations on the stream are underlain by coal.

Findings

The gauging station on Big Ditch in T. 23 N., R. 83 W., Section 30, is over federal coal on lands managed by the Bureau of Reclamation. The Geological Survey operates the gauge.

Data Source and Quality of Data

Master Title Plats and surface water resource maps were again the source and data is excellent and current.

Unsuitability Determinations

The area of the gauging station in T. 23 N., R. 83 W., Section 30, is determined to be unsuitable. All other areas are determined to be acceptable with no likely problems.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

7. Historic Lands and Sites (Map 2-2)

CRITERION

All districts, sites, buildings, structures, and objects of historic, architectural, archeological, or cultural significance which are included in or eligible for inclusion in the National Register of Historic Places, and an appropriate buffer zone around the outside boundary of the property (to protect the inherent values of the property that made it eligible for listing in the National Register) as determined by the land management agency, in consultation with the Advisory Council on Historic Preservation or by procedures approved by the Advisory Council, shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	240	170,880
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	46,590	33,172,080
--with no likely problems	-0-	-0-

*Assuming an average of 712 tons/acre.

Process

The criterion was applied to existing data collected in 1973.

Findings

A total of 168 historic and prehistoric sites were located. Eighty of these sites require additional work (mapping and test excavations) to determine eligibility for nomination to the National Register of Historic Places.

One site (No. 48CR122) has been deemed eligible for nomination to the National Register of Historic Places. This site is located in the N½N½, Section 34, and the SW¼SW¼, Section 26, T. 23 N., R. 84 W. This site encompasses 240 acres of federal lands determined to be unsuitable.

Data Sources and Quality of Data

The following reports provide the data for the inventoried areas. All reports except Metcalf's (1977) were prepared by the Wyoming Recreation Commission staff. These inventory data were compiled by cultural resource consultants who hold Antiquities Permits for work on BLM-administered lands in Wyoming and, therefore, the data are considered adequate.

Craig, C., and T. K. Larson
1977 Continued Archeological Investigations on the Rosebud Coal Mine Area, Hanna, Wyoming

Larson, T. K., and C. Craig
1977 Continued Archeological Investigations on the Arch Mineral Corporation Seminoe II Mine, Hanna, Wyoming

Metcalf, M., Ed.
1977 An archeologist Sampling Survey of the Sweetwater Kemmerer and Hanna-Atlantic Rim Coal ES areas. Western Wyoming College, Occasional Papers 10.

Reher, C. A. and R. R. Peterson
1978a Archeological Survey for the Rosebud Coal Sales Company

Reher, C. A. and R. R. Peterson
1978b Report of Archeological Survey for Arch Mineral Corporation Seminoe I Mine, Carbon County, Wyoming

Walker, P. N., and T. K. Larson
1977a Cultural Resource Studies on the Arch Mineral Corporation Hanna South Mine, Carbon County, Wyoming

Walker, P. N. and T. K. Larson
1977b Continued Archeological Studies on the Arch Mineral Corporation Seminoe I Mine, Carbon County, Wyoming.

Walker, P. N., L. C. Todd, and G. M. Zeimens
1977 Cultural Resource Investigations on the Proposed Energy Development Coal Mine, Near Hanna, Carbon County, Wyoming

Walker, D., and G. M. Zeimens
1976 Results for archeological survey of the Arch Mineral Corporation Seminoe Number I Mine, Hanna, Wyoming

Zeimens, George M.
1973 Findings Relevant to an Evaluation of Mining Operations on Archeological Resources on Medicine Bow Coal Company Leases

Unsuitability Determinations

Two hundred forty (240) acres of federal lands and 170,880 tons of federal coal are determined to be unsuitable. Another 46,590 acres of federal lands and 33,172,080 tons of federal coal are determined to be acceptable with inventory needs.

EXCEPTION

Leasing may be allowed if the land management agency determines:

1. The site, structure, or object is of regional or local significance only with the concurrence of the State, or

2. In consulatation with the Advisory Council on Historic Preservation, the direct and indirect effects of coal mining to properties on or eligible for the National Register of Historic Places will not result in significant adverse impacts to the site, structure, or object.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	240	170,880
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	46,590	33,172,080
--with no likely problems	-0-	-0-

*Assuming an average of 712 tons/acre.

Process

The exceptions were considered based on the available cultural resource inventory data and on evaluation results.

Findings

Based on available cultural resource inventory data and evaluation results, it was determined that coal mining could not be conducted without adversely impacting the quality of or destroying the site which has been evaluated as eligible for nomination to the National Register of Historic Places. Therefore, the exceptions cannot be applied.

Data Sources and Quality of Data

The following reports provide the data for the inventoried areas. All reports except Metcalf's (1977) were prepared by the Wyoming Recreation Commission staff. These inventory data were compiled by cultural resource consultants who hold Antiquities Permits for work on BLM-administered lands in Wyoming and, therefore, the data are considered adequate.

Craig, C., and T. K. Larson
1977 Continued Archeological Investigations on the Rosebud Coal Mine Area, Hanna, Wyoming

Larson, T. K., and C. Craig
1977 Continued Archeological Investigations on the Arch Mineral Corporation Seminoe II Mine, Hanna, Wyoming

Metcalf, M., Ed.
1977 An archeologist Sampling Survey of the Sweetwater-Kemmerer and Hanna-Atlantic Rim Coal ES areas. Western Wyoming College, Occasional Papers 10.

Reher, C. A. and R. R. Peterson
1978a Archeological Survey for the Rosebud Coal Sales Company

Reher, C. A. and R. R. Peterson
1978b Report of Archeological Survey for Arch Mineral Corporation Seminoe I Mine, Carbon County, Wyoming

Walker, P. N., and T. K. Larson
1977a Cultural Resource Studies on the Arch Mineral Corporation Hanna South Mine, Carbon County, Wyoming

Walker, P. N. and T. K. Larson
1977b Continued Archeological Studies on the Arch Mineral Corporation Seminoe I Mine, Carbon County, Wyoming.

Walker, P. N., L. C. Todd, and G. M. Zeimens
1977 Cultural Resource Investigations on the Proposed Energy Development Coal Mine, Near Hanna, Carbon County, Wyoming

Walker, D., and G. M. Zeimens
1976 Results for archeological survey of the Arch Mineral Corporation Seminoe Number I Mine, Hanna, Wyoming

Zeimens, George M.
1973 Findings Relevant to an Evaluation of Mining Operations on Archeological Resources on Medicine Bow Coal Company Leases

Unsuitability Determinations

Two hundred forty (240) acres of federal lands and 170,880 tons of federal coal are determined to be unsuitable. Another 46,590 acres of federal lands and 33,172,080 tons of federal coal are determined to be acceptable with inventory needs.

PUBLIC COMMENT

The Wyoming Recreation Commission indicated they would await future site specific statements before recommending cultural clearance.

8. Natural Areas

CRITERION

Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Existing lists of the above areas were examined and no natural areas were found in the area.

Findings

No natural areas which would fit the above classification are found in the area. The entire area is determined to be acceptable with no likely problems.

Data Sources and Quality of Data

The Heritage Conservation and Recreation Service has determined that there are no natural areas or National Natural Landmarks within the Red Rim-China Butte area. The quality of the available data is considered adequate.

Unsuitability Determinations

No unsuitable areas were found.

EXCEPTIONS

Leasing may be allowed in these areas or sites if the land management agency determines that:

1. The area or site is only of regional or local significance only with the concurrence of the state, or

2. The use of appropriate mining technology will result in no significant adverse impact to the area or site, or

3. The mining of the coal resource will enhance information recovery (e.g., paleontological sites).

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

No areas were found to be unsuitable.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

9. Federally Listed Endangered Species (Map 2-3)

CRITERION

Legally designated critical habitat for federal threatened/endangered (T/E) plant and animal species, and habitat for federal T/E species which is determined by the Fish and Wildlife Service (FWS) and the land management agency to be of essential value and where the presence of T/E species has been scientifically documented, shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	6,569	4,677,128
--with inventory needs	36,009	25,638,408
--with no likely problems	4,252	3,027,424

*Assuring an average of 712 tons/acre.

Process

Criterion application:

The criterion was applied with existing data and inventories. Data from ongoing winter surveys have not been incorporated at this time.

Definitions:

Definitions used were those used by the FWS.

Supplemental guidance:

Mayo Call, BLM, was consulted about avian endangered species and buffer zones.

Deviations from criterion definitions:

None.

Findings

FWS believe that mining would not jeopardize the continued existence of the black-footed ferret or the bald eagle for the Hanna South, Seminoe I, Seminoe II bypass, Rosebud bypass, and Medicine Bow bypass sites. The FWS has not evaluated the remainder of the Hanna Basin. No comprehensive surveys of prairie dog towns have been completed.

Historical data provided by Wyoming Game and Fish Department for the Southcentral Coal ES shows a wide distribution of prairie dogs throughout the Hanna area, but little documentation exists on the current situation. Surveys of both prairie dogs and black-footed ferrets need to be completed.

A comprehensive survey of bald eagle wintering areas and areas used during migration has not been completed. The Wyoming Game and Fish Department has identified a bald eagle wintering area along the Medicine Bow River adjacent to the Hanna Basin area, but additional field work is required to document the size of the area and its importance. No bald eagle nests have been identified, but some limited potential exists for nests along Seminoe Reservoir and the Medicine Bow River.

No recent sightings of peregrine falcons have been documented for this area. Because of the existing perennial streams and associated nesting sites, limited potential exists along Seminoe Reservoir, Medicine Bow River and possibly Hanna Draw for nesting peregrine falcons. No comprehensive survey has been completed.

Data Sources and Quality of Data

Data sources are BLM URA, Southcentral Coal ES, and Wyoming Game and Fish Department contract documents. Data are inadequate.

Unsuitability Determinations

Acceptable pending study:

1. Black-footed ferret: Known active prairie dog town and a ½-mile buffer zone around this known site.
2. Bald Eagle: One mile buffer zone along the Medicine Bow River and Seminoe Reservoir.
3. Peregrine Falcon: One mile buffer zone along the Medicine Bow River and Seminoe Reservoir.

Acceptable with inventory needs:

The remainder of the Hanna Area is determined to be acceptable with inventory needs in the coal activity planning process. To complete the analysis in the coal activity planning process, a study on prairie dog distribution and an exhaustive search for black-footed ferrets would be necessary.

EXCEPTION

Leasing may be allowed if, after consultation with the Fish and Wildlife Service, the land management agency determines the species habitat will not be adversely affected by coal development.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	6,569	4,677,128
--with inventory needs	36,009	25,638,408
--with no likely problems	4,252	3,027,424

*Assuming an average of 712 tons/acre.

Process

Exceptions were applied to unsuitable areas only. No areas were determined to be unsuitable under this criterion.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

See "Unsuitability Determinations" above.

PUBLIC COMMENT

No comments were received on the specific results of applying this criterion on the Hanna Basin review area.*

*Consultation with the U.S. Fish and Wildlife Service is not complete.

10. State Listed Endangered Species

CRITERION

Habitats deemed critical or essential for plants and animal species listed by the state pursuant to state law as endangered or threatened shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

The State of Wyoming does not presently have a law regarding threatened or endangered plants or animals. Therefore, the criterion has not been applied. No coal reserves will be affected by this criterion.

Findings

The State of Wyoming has a list of rare species of wildlife; however, these species are not legally designated by law.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

Not applicable.

EXCEPTIONS

A lease may be issued if, after consultation with the state, the land management agency determines that the species will not be adversely affected by the coal development.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

The State of Wyoming presently has no law regarding threatened or endangered plants or animals. Therefore, neither the criterion nor its exception has been applied.

PUBLIC COMMENT

No specific comments were received, since this criterion was not applied.

11. Bald and Golden Eagle Nests (Map 2-4)

CRITERION

Bald and golden eagle nests that are determined to be active and a buffer zone of land in a ½-mile radius from the nests are areas which shall be considered unsuitable for coal mining, except that, during the non-breeding season, mining can be conducted within the buffer zone. Consideration of availability of habitat for prey species shall be included in the determination of buffer zones.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	107	76,184
Acceptable for further consideration for coal development:		
--pending study	2,561	1,823,432
--with inventory needs	17,385	12,378,120
--with no likely problems	26,777	19,065,224

*Assuming an average of 712 tons/acre.

Process

Criterion application:

This criterion was applied with existing data on nesting eagles inventoried in the Hanna Basin area. New data were incorporated from 1978-79 winter surveys.

Definitions:

A nest was determined to be active if there were observations of bird use or signs that indicated the nest was used during some phase of the reproductive process during the 1978 nesting season.

Supplemental guidance:

Original Stewart paper criteria, previous contacts with and guidance from FWS, and BLM staff (M. Call).

Deviations from criterion definitions:

The criterion exception states "buffer zones may be increased or decreased if the land management agency determines that the active eagle nests will not be adversely affected." Nests with poorly documented histories of activity and all active nests were given 1-mile radius buffers (acceptable pending study) to protect areas/nests until adequate study/documentation is completed.

Findings

All known eagle's nests on the Review Area are listed below. Active golden eagle nesting sites are annotated with an "A".

Location

A SE¼SE¼, Section 16, T. 23 N., R. 81 W.
SW¼SW¼, Section 5, T. 22 N., R. 81 W.
NW¼NE¼, Section 8, T. 22 N., R. 81 W.
SW¼NW¼, Section 8, T. 22 N., R. 81 W.
SW¼NE¼, Section 28, T. 23 N., R. 81 W.
NE¼SE¼, Section 4, T. 23 N., R. 81 W.
A NW¼SE¼, Section 31, T. 22 N., R. 82 W.
A NE¼SE¼, Section 30, T. 23 N., R. 83 W.
A SE¼NE¼, Section 2, T. 22 N., R. 84 W.
SE¼, Section 6, T. 22 N., R. 83 W.
A SW¼NE¼, Section 25, T. 23 N., R. 83 W.
NE¼NE¼, Section 7, T. 22 N., R. 82 W.
NW¼NE¼, Section 3, T. 24 N., R. 83 W.
A Section 8, T. 22 N., R. 82 W.
Section 11, T. 22 N., R. 82 W.
A Section 17, T. 22 N., R. 82 W.

No nesting sites have been evaluated for availability of prey.

No bald eagle nests have been identified; however, potential exists for such nests. This potential has been addressed under Criterion 9. A systematic survey has not been conducted for the Hanna Basin Area, but one is planned for the spring 1979 breeding season.

Data Sources and Quality of Data

Data sources are BLM URAs, BLM Southcentral Coal ES, and Wyoming Game and Fish Department data. Data are variable in quality and surveys are inadequate.

Unsuitability Determinations

Unsuitable:

An area within a radius of ¼ mile around active golden eagle nests is determined to be unsuitable. Two active nest sites have been included in the acceptable pending study category until their locations are verified.

Acceptable pending study:

An area within a radius of ¼ to 1 mile around all active eagle nests and an area within a radius of 1 mile around all other nests is determined to be acceptable pending study.

Acceptable with inventory needs:

These areas probably contain additional golden eagle nests and need to be studied in the coal activity planning process.

Acceptable with no likely problems:

The remainder of the Hanna Basin Area is determined to be acceptable with no likely problems.

EXCEPTIONS

A lease may be issued if:

1. It can be conditioned in such a way, and during periods of time, that eagles will not be disturbed during breeding season, or

2. A permit or special approval is granted by the Fish and Wildlife Service to allow the eagle nest to be moved.

Buffer zones may be increased or decreased if the land management agency determines that the active eagle nests will not be adversely affected.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	107	76,184
Acceptable for further consideration for coal development:		
--pending study	2,561	1,823,432
--with inventory needs	17,385	12,378,120
--with no likely problems	26,777	19,065,224

*Assuming an average of 712 tons/acre.

Process

The exceptions were considered based on a review of laws, nesting and breeding behavior, types of disturbance, and the study area.

Findings

Exception 1:

Federal lands within the unsuitable area cannot be mined in such a way that nesting eagles will not be disturbed. Mining cannot be economically conducted with a shut-down period of 3-4 months.

Exception 2:

Regulations may be drafted in the future to permit destruction or moving of eagles nests, but this option does not currently exist.

The buffer around the nest will be of a 1-mile radius for the acceptable pending study category, until field examination, literature review, and consultation provide data to justify any change.

Data Sources and Quality of Data

BLM Technical Note 239. Habitat Management Series for Unique or Endangered Species. Report No. 7. Golden Eagle.

Mayo Call, Ph.D., Avian Biologist, BLM, Denver Service Center.

Stewart, R.E., Ph.D., Coal Project Leader. Proposed Environmental Guidelines for Identifying Lands Suitable for Competitive Federal Coal Leasing. February 28, 1978.

50 CFR 22. Bald Eagle Protection Act. 16 U.S.C. 668-668d.

Unsuitability Determinations

See "Unsuitability Determinations" above.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

12. Bald and Golden Eagle Roost and Concentration Areas (Map 2-3)

CRITERION

Bald and Golden Eagle roost and concentration areas used during migration and wintering shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	6,394	4,552,528
--with inventory needs	40,436	28,790,432
--with no likely problems	-0-	-0-

*Assuming an average of 712 tons/acre.

Process

Criterion application:

The criterion was applied with existing data and inventories. Data from ongoing winter surveys have not been incorporated at this time.

Definitions:

A roost or concentration area is defined as an area that is used by at least 5 to 10 eagles per mile of river, or at least 5 to 10 eagles per square mile of aquatic or upland area, and is used for a minimum of at least two weeks during the course of the winter.

Supplemental guidance:

Definition was provided by Mayo Call, BLM Avian Biologist, Denver Service Center.

Deviation from criterion definitions:

Criterion provided no definitions.

Findings

The Hanna Basin area has not been adequately surveyed to define or identify bald and golden eagle concentration areas. (Limited data on bald eagle winter areas was obtained from the Southcentral Coal ES. Additional data for both golden and bald eagles are presently being collected. A considerable number of golden eagles are currently using the area.

Data Sources and Quality of Data

BLM Southcentral Coal ES, Map 8B (Wyoming Game and Fish Department data), and BLM staff biologists, 1978-79 winter surveys.

Data are adequate for year being examined but are inadequate to corroborate data from 1977-78 survey (Southcentral Coal ES).

Unsuitability Determinations

Unsuitable:

None identified at this time.

Acceptable pending study:

One-mile buffer along the Medicine Bow River and Seminoe Reservoir.

Acceptable with inventory needs:

The remainder of the Hanna area is determined to be acceptable with inventory needs.

Acceptable with no likely problems:

None identified.

EXCEPTION

A lease may be issued if the land management agency determines that mining can be conducted in such a way, and during such periods of time, to ensure that eagles will not be adversely disturbed.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	6,394	4,552,528
--with inventory needs	40,436	28,790,432
--with no likely problems	-0-	-0-

*Assuming an average of 712 tons/acre.

Process

Not applicable as no areas were identified as unsuitable under this criterion. The exception cannot be applied until completion of the inventory.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

See "Unsuitability Determinations" above.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

13. Falcon Cliff Nesting Sites (Map 2-5)

CRITERION

Federal lands containing falcon cliff nesting sites with active nests and a buffer zone of federal lands ¼-mile radius from the nest to provide needed prey shall be considered unsuitable for coal mining, except that, during the non-breeding season, mining can be conducted within the buffer zone. Consideration of availability of habitat for prey species shall be included in the determination of buffer zones.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	100	71,200
Acceptable for further consideration for coal development:		
--pending study	708	504,096
--with inventory needs	18,741	13,343,592
--with no likely problems	27,281	19,424,072

*Assuming an average of 712 tons/acre.

Process

Criterion application:

The criterion was applied with existing data on nesting falcons. These data were collected in 1978.

Definitions:

Active nesting sites were defined as areas where defense of sites and white wash were observed.

Supplemental guidance:

Call, Mayo. Nesting Habitats and Surveying Techniques for Common Western Raptors. BLM Technical Note TN-316.

Deviations from criterion definitions:

The criterion exception states "buffer zones may be increased or decreased if the land management agency determines the active falcon nests will not be adversely affected." All active nest sites were given 1-mile radius buffers (acceptable pending study) to protect nest sites until adequate study/documentation is completed.

Findings

Two prairie falcon eyries had nesting attempts during the 1978 spring breeding season based on observed defense of areas and/or white wash.

Location

NW¼NE¼, Section 8, T. 22 N., R. 81 W.
NE¼SE¼, Section 20, T. 23 N., R. 81 W.

The potential exists for additional falcon nests in other areas. These have been determined from aerial photos based on exposed rock or rugged terrain.

Data Sources and Quality of Data

BLM staff biologists, 1978 survey data; URA and special 1978 survey by Brian Millsap, DSC. A complete survey is needed to document the extent of falcon nesting in the Hanna Basin.

Unsuitability Determinations

Unsuitable:

An area of ¼-mile radius around active eyries.

Acceptable pending further study:

One-mile radius around active eyries.

Acceptable with inventory needs:

These areas probably contain additional falcon nest sites and need to be studied in the coal activity planning process.

Acceptable with no likely problems:

The remainder of the Hanna Basin area is determined to be acceptable with no likely problems.

EXCEPTIONS

A lease may be issued if:

1. The land management agency determines that coal mining will not adversely impact the nesting sites during the breeding season, or

2. Nest sites may be moved with concurrence of the Fish and Wildlife Service.

Buffer zones may be increased or decreased if the land management agency determines the active falcon nests will not be adversely affected.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	100	71,200
Acceptable for further consideration for coal development:		
--pending study	708	504,096
--with inventory needs	18,741	13,343,592
--with no likely problems	27,281	19,424,072

*Assuming an average of 712 tons/acre.

Process

The exceptions were considered based on a review of laws, nesting and breeding behavior, types of disturbance, and the study area.

Findings

Exception 1:

Federal lands within the unsuitable area cannot be mined in such a way that nesting falcons will not be disturbed. Mining cannot be economically conducted with a shut-down period of 3-4 months.

Exception 2:

Due to the nature of falcon cliff nesting sites and nests, this exception is not believed to be applicable. Creation of additional nesting sites in unaffected cliffs should be possible, but for most areas they do not appear to be limiting. If these sites are limiting production of coal and if concurrence is obtained from FWS along with necessary permits, the exception could be applied at that time.

The unsuitable buffer zone (¼-mile radius) and the acceptable pending study zone (1-mile radius) should be maintained until a site-specific study suggests changes are warranted.

Data Sources and Quality of Data

BLM Staff Avian Biologist Mayo Call, Ph.D., Denver Service Center.

BLM Technical Note 240. Habitat Management Series for Unique or Endangered Species. Report 8. Prairie Falcon.

Unsuitability Determinations

See "Unsuitability Determinations" above.

PUBLIC COMMENT

Concern was expressed that the criterion does not differentiate between rare or very common falcon species.

14. Migratory Birds (Map 2-6)

CRITERION

Federal lands which are high priority habitat for migratory bird species of high federal interest on a regional or national basis, as determined jointly by the Federal land management agency and the Fish and Wildlife Service, shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	2,932	2,087,584
--with inventory needs	39,646	28,227,952
--with no likely problems	4,252	3,027,424

*Assuming an average of 712 tons/acre.

Process

Criterion application:

The criterion was applied without input from the FWS to jointly determine the species of high federal interest on a regional or national basis. The BLM staff biologists compiled a list of species that are expected to be on that joint list. The following species were determined to be of high federal interest to the BLM:

- buteo hawks
- accipter hawks
- harriers
- owls
- wading birds
- shorebirds
- migratory game birds
- species listed on the blue list (sensitive species)

The high priority habitats were determined by BLM staff biologists to be nesting habitats and wetlands for migratory birds.

Definitions:

A nest was determined to be active if bird use was observed or if signs indicated that the nest was used during some phase of the reproduction cycle during the 1978 nesting season. A ferruginous hawk nest in good repair with cow chips in place could be considered active under this criterion even if no use was actually observed.

Supplemental guidance:

BLM staff (Mayo Call)

Deviations from criterion definitions:

None. Criterion does not specify which specific area should be treated in a specific manner. The criterion was applied in the same manner as criteria 11 and 13. It is anticipated that when coordination with FWS is completed, buffer zones will be similar to those applied in criteria 11 and 13, namely an area of ¼-mile radius will be determined to be unsuitable around active raptor nests, and from ¼ to 1-mile radius will be determined to be acceptable pending study.

Findings

Documented raptor nesting sites, not covered by one of the preceeding criteria, are as follows (documented active nest sites are annotated with an "A").

	Species	Location
	Ferruginous Hawk	NE¼NW¼, Section 35, T. 23 N., R. 83 W.
	Ferruginous Hawk	SW¼SE¼, Section 11, T. 22 N., R. 83 W.
	Ferruginous Hawk	Section 1, T. 22 N., R. 83 W.
A	Ferruginous Hawk	NW¼, Section 4, T. 23 N., R. 81 W. (3 nests)
A	Great Horned Owl	SW¼SW¼, Section 5, T. 22 N., R. 81 W.
A	Burrowing Owl	NW¼SE¼, Section 8, T. 23 N., R. 83 W.
A	Ferruginous Hawk	NE¼SE¼, Section 12, T. 22 N., R. 81 W.
A	Swainson's Hawk	NE¼NE¼, Section 7, T. 22 N., R. 80 W.
A	Ferruginous Hawk	NE¼NE¼, Section 4, T. 22 N., R. 80 W.
	Buteo	SW¼NW¼, Section 20, T. 22 N., R. 81 W.

The entire Hanna Basin area has high potential for ferruginous hawk nesting, but only a few nests have been documented. Because the area has not been surveyed, a proper evaluation could not be made.

Data Sources and Quality of Data

Data sources are BLM biologists' 1978 survey data, URA, and a special 1978 survey by Brian Millsap, BLM, Denver Service Center.

Completion of a joint list by BLM and FWS is required. A survey of the entire Hanna area would then be needed for the species agreed upon.

Unsuitability Determinations (pending completion of joint agreement)

Unsuitable:

None.

Acceptable pending study:

An area within a radius of 1 mile around identified nest sites is determined to be acceptable pending study.

Acceptable with inventory needs:

The remainder of the Hanna Basin area is determined to be acceptable with inventory needs.

EXCEPTION

A lease may be issued where the land management agency, after consultation with the Fish and Wildlife Service, determines that coal mining will not adversely impact the migratory bird habitat during periods when such habitat is used by the species.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	2,932	2,087,584
--with inventory needs	39,646	28,227,952
--with no likely problems	4,252	3,027,424

*Assuming an average of 712 tons/acre.

Process

Coordinating application of this criterion with the FWS has not been completed.

Findings

Site-specific and species-specific analyses need to be completed to determine whether sizes of buffer areas may be changed.

Data Sources and Quality of Data

BLM Avian Biologist Mayo Call, Denver Service Center. 50 CFR 10 and 50 CFR 17.

Unsuitability Determinations

See "Unsuitability Determinations" above.

PUBLIC COMMENT

Comments questioned the draft unsuitability determinations because BLM and the U.S. Fish and Wildlife Service had not jointly determined "high priority habitat for migratory bird species of high federal interest on a regional or national basis". As a result of these comments, there are no areas determined to be unsuitable.*

*Consultation with the U.S. Fish and Wildlife Service has been initiated, but is not complete at this time.

15. State Resident Fish and Wildlife (Map 2-7)

CRITERION

Federal lands which the land management agency and the State jointly agree are fish and wildlife habitat for resident species of high interest to the State and which are essential for maintaining these priority wildlife species shall be considered unsuitable for coal mining.

Such lands shall include:

- --Active dancing and strutting grounds for sage grouse, sharp-tailed grouse, and prairie chicken.
- --The most critical winter ranges for deer, antelope and elk.
- --Migration corridors for elk.

Such lands may include appropriate buffer zones as determined jointly by the land management agency and the State.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	109	77,608
Acceptable for further consideration for coal development:		
--pending study	20,755	14,777,560
--with inventory needs	21,714	15,460,368
--with no likely problems	4,252	3,027,424

*Assuming an average of 712 tons/acre.

Process

Criterion application:

This criterion was applied with existing data. Some new data were incorporated from 1978-79 winter surveys.

Definitions:

Only the most critical winter ranges for big game and sage grouse and sage grouse nesting and breeding complexes were examined under this criterion. In developing species lists jointly with the State of Wyoming Game and Fish Department, no other critical areas of concern were identified except for raptor areas which have been addressed under previous criteria.

Active strutting grounds and an area within a radius of ¼ mile were determined to be unsuitable. Areas within a radius of ¼ to 2 miles were determined to be acceptable pending study for nesting areas.

The most critical big game ranges were determined to be unsuitable.

Supplemental guidance:

Wyoming Game and Fish Department, BLM URAs, and BLM Southcentral Coal ES.

Deviations from criterion definitions:

An area of 2-miles radius around sage grouse nesting areas was determined to be acceptable pending study until site-specific studies indicate changes are needed.

Findings

Sage Grouse strutting grounds active in 1977 and/or 1978:

Location

NE¼, Section 2, T. 21 N., R. 83 W. (probably mislocated 1977)
SW¼, Section 6, T. 21 N., R. 82 W.
NW¼, Section 32, T. 22 N., R. 83 W.
Section 32, T. 24 N., R. 83 W.
NE¼, Section 33, T. 23 N., R. 82 W.
NE¼, Section 1, T. 22 N., R. 83 W.
Section 27, T. 23 N., R. 82 W.
NE¼, Section 6, T. 21 N., R. 81 W.
Section 22, T. 22 N., R. 82 W.

Additional effort to locate strutting grounds is required to completely document the breeding complexes in the Hanna Basin area. It is believed that less than 50 percent of the Hanna Basin area has adequate documentation.

Critical nesting areas are within a radius of 2 miles from the strutting grounds.

Critical winter areas for big game have not been identified in the area. Winter (1978-79) surveys indicate potential critical areas for antelope may exist.

Winter concentration areas for sage grouse are located on Map 2-7.

Other species of state concern either were covered under previous criteria (raptors) or were not known to have critical habitats in the Hanna area (including mammals, birds, reptiles, etc.).

Data Sources and Quality of Data

BLM URAs, BLM Southcentral Coal ES, and Wyoming Game and Fish Department data. Evaluation of big game critical range potential needs to be further examined. A complete inventory for sage grouse strutting grounds is needed. No site-specific inventories for state rare species is known to have been completed.

Unsuitability Determinations

Unsuitable:

An area ¼ mile around active sage grouse strutting grounds.

Acceptable pending study:

An area 2 miles around all active sage grouse strutting grounds.

Winter concentration areas for sage grouse. Most critical winter areas for antelope.

Acceptable with inventory needs:

With the exception of 4,252 acres the area needs to be systematically inventoried for sage grouse strutting grounds.

Acceptable with no likely problems:

4,252 acres.

EXCEPTIONS

A lease may be issued if:

1. It is demonstrated that complete mitigation is possible; or
2. Following discussions between the State wildlife agency and the Federal land management agency, the Federal land management agency determines that the species being protected will not be adversely affected by the mining activity.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	109	77,608
Acceptable for further consideration for coal development:		
--pending study	20,755	14,777,560
--with inventory needs	21,714	15,460,368
--with no likely problems	4,252	3,027,424

*Assuming an average of 712 tons/acre.

Process

The exceptions were considered based on a review of breeding behavior, nesting requirements, types of disturbance, and demonstrated reclamation. Any loss of strutting grounds or critical winter range is considered significant and very long term.

Findings

Exception 1:

Proven techniques of mitigation are not presently known; therefore, this exception cannot be generally applied. However, research is being conducted to perfect a technique for moving sage grouse strutting grounds. Should the opportunity arise for research to be conducted within a proposed coal mining area, this type of research may be approved pending coordination with the Wyoming Game and Fish Department.

Exception 2:

Mining of strutting grounds will affect the species locally in proportion to the number of strutting grounds impacted and number of birds using them. The exception cannot be applied at this time because technology is lacking for moving strutting grounds and the number of birds that would be impacted is unknown.

Data Sources and Quality of Data

Wallestad, R. and D. Pyrah. 1974. Movement and Nesting of Sage Grouse Hens in Central Montana. Journal of Wildlife Management. 38(4):630-633.

Wallestad, R. and P. Schladweiler. 1974. Breeding Season Movements and Habitat Selection of Male Sage Grouse. Journal of Wildlife Management. 38(4):634-637.

Western States Sage Grouse Committee. 1974. Guidelines for Habitat Protection in Sage Grouse Range. 12 pp.

Unsuitablity Determinations

See "Unsuitability Determinations" above.

PUBLIC COMMENT

Public comment from all sectors of the public focused on this criterion more than any of the other criteria. Comments addressed and questioned every aspect of applying the criterion and exceptions including definitions, interpretations, data sources, quality of data, and the unsuitablity determinations.*

*BLM had conducted intensive coordination with the Wyoming Department of Game and Fish regarding inventory data, habitat delineations, populations, and the unsuitability determinations.

16. Wetlands (Map 2-8)

CRITERION

Federal lands containing: (1) inland lakes, impoundments, and associated wetlands; (2) inland shallow, predominantly vegetated wetlands; or (3) riverine wetland systems, lower perennial and upper perennial systems with flow greater than 5 cubic feet per second and riparian zones in a "relatively undisturbed" state that are larger than one linear mile along a riverine system, shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	5,353	3,811,336
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	10,965	7,807,080
--with no likely problems	30,512	21,724,544

*Assuming an average of 712 tons/acre.

Process

Wetlands were evaluated by using 7½ minute quadrangle maps to identify perennial streams and intermittent lakes. Color infrared (IR) aerial photographs were used to locate areas with riparian vegetation. Results and photos from a 1977 survey of water developments were used to determine which reservoirs were potential wetland areas.

Findings

Seminoe Reservoir, Medicine Bow River, and Austin Creek, all of which have perennial flows, were determined to have wetland characteristics. No buffer zone was delineated, but one should be defined at a later date. Many impoundments and some playa type lakes have been determined to be possible wetlands.

Several areas which have springs, ponds, or intermittent stream flows have also been identified. These areas may have wetland characteristics, but no on-the-ground data are available to verify whether this is true and how much of the area is a wetland.

Data Sources and Quality of Data

USGS 7½ minute topographic quadrangle maps

Color infrared photos and transparencies of 1:30,680 scale

Carnevale, Mike and Ron Gumtow. Description of a Baseline Inventory of Surface Waters on Public Lands in Wyoming. USDI, BLM, Division of Resources, Cheyenne, Wyoming.

Rawlins District BLM. Water Development Inventory. 1975.

Unsuitability Determinations

The impoundments identified by the 1977 inventory (Seminoe Reservoir, Medicine Bow River, and Austin Creek) are determined to be unsuitable. The other areas identified (Map 2-8) are determined to be acceptable with inventory needs. The remainder of the review area is determined to be acceptable with no likely problems.

EXCEPTIONS

A lease may be issued where the land management agency determines that:

1. The use of appropriate mining or reclamation technology will not significantly affect the wetlands or will provide for complete restoration, or

2. The wetlands contain no significant values for groundwater recharge, fish and wildlife habitat, recreation, or scientific study.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	5,045	3,592,040
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	10,385	7,394,120
--with no likely problems	31,400	22,356,800

*Assuming an average of 712 tons/acre.

Process

Areas determined to be unsuitable by this criterion and acceptable by the multiple use analysis were reexamined by applying the exceptions to see if any of the unsuitable areas could be determined to be acceptable.

Findings

All impoundments and playa type lakes can be reconstructed after coal mining has taken place. Thus, these areas are determined to be acceptable with no likely problems.

Data Sources and Quality of Data

See "Data Sources and Quality of Data" above.

Unsuitability Determinations

The areas of Seminoe Reservoir, Medicine Bow River, and Austin Creek remain unsuitable. The areas identified as having inventory needs remain in that category because we presently lack information about the situation in those areas. The remainder of the area is determined to be acceptable with no likely problems, including impoundments and lakes, since they can be restored.

PUBLIC COMMENTS

No public comments were received relative to application of this criterion.

17. Floodplains (Map 2-9)

CRITERION

Riverine, coastal, and special floodplains (100-year recurrence interval) shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	6,484	4,616,608
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	40,346	28,726,352

*Assuming an average of 712 tons/acre.

Process

The method used to determine floodplains was to use the Carbon County Soil Survey to find areas with soils developed on floodplains. These delineations were applied to the guidelines of Instruction Memos WY-79-90 and WY-79-90, Change 1.

Findings

The identified floodplains correspond to the areas which are also possible Alluvial Valley Floors (Criterion 23).

The drainages which fit the floodplain conditions are the following

1. Austin Creek Valley from the line separating R. 82 W. from R. 83 W. to the point where it enters Seminoe Reservoir.
2. Medicine Bow River Valley from the line separating R. 81 W. from R. 82 W. to Seminoe Reservoir.
3. Pine Draw from ¼ mile east of the line separating R. 81 W. and R. 80 W. to the eastern edge of the study area.
4. Hanna Draw from the boundary between Sections 20 and 29, T. 23 N., R. 81 W., to the point where it enters the Medicine Bow River.
5. Standpipe Draw from the line between T. 21 N. and T. 22 N., to the point where it enters Big Ditch.
6. Big Ditch from the boundary betwen Sections 11 and 12, T. 22 N., R. 81 W., to the point where it enters Seminoe Reservoir.
7. Saint Mary's Creek from Section 4, T. 21 N., R. 82 W., to Section 34, T. 22 N., R. 83 W.

8. Middle Ditch from Section 26, T. 23 N., R. 82 W., to the point where it enters Big Ditch.
9. North Ditch from the line between Sections 15 and 16, T. 23 N., R. 82 W., to the point where it enters Seminoe Reservoir.
10. Seminoe Reservoir high waterlines.

Data Sources and Quality of Data

USGS 7½ minute topographic maps
SCS soil surveys and aerial photos

These sources are adequate for initial delineation of floodplains, but field checks and peak flow data are absent. The field data are necessary to make the final determinations of floodplain location.

Unsuitability Determinations

All ten areas mentioned above in "Findings" are determined to be unsuitable because they meet all of the conditions outlined in the instruction memos.

EXCEPTIONS

Leasing may be allowed where the land management agency determines that:

1. Leasing a particular tract is the only practicable alternative, and
2. Potential for harm to people or property and natural and beneficial values of floodplains can be minimized through use of demonstrated and available mining and mitigation measures.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	5,077	3,614,824
Acceptable for further consideration for coal development:		
--pending study	1,407	1,001,784
--with inventory needs	-0-	-0-
--with no likely problems	[illegible]0,346	28,726,352

*Assuming an average of 712 tons/acre.

Process

Those areas determined to be unsuitable by this criterion but acceptable through the multiple use evaluation were reexamined to see if the exception could be applied.

Findings

The exceptions were applied to the following areas:

1. Pine Draw from ¼ mile east of the line separating R. 81 W. and R. 80 W. to the eastern edge of the study area.
2. Hanna Draw from the boundary between Sections 20 and 29, T. 23 N., R. 81 W., to the point where it enters the Medicine Bow River.
3. Standpipe Draw from the line between T. 21 N. and T. 22 N. to the point where it enters Big Ditch.
4. Big Ditch from the boundary between Sections 11 and 12, T. 22 N., R. 81 W., to the point where it enters Seminoe Reservoir.
5. Saint Mary's Creek from Section 4, T. 21 N., R. 82 W., to Section 34, T. 22 N., R. 83 W.
6. Middle Ditch from Section 26, T. 23 N., R. 82 W., to the point where it enters Big Ditch.
7. North Ditch from the line between Sections 15 and 16, T. 23 N., R. 82 W., to the point where it enters Seminoe Reservoir.

All of the above areas meet the conditions outlined in the instruction memos used to determine floodplains. Some sort of a floodplain exists along each drainage, but the magnitude and frequency of flooding is not known. The potential for harm may possibly be minimized through the mining techniques used, but mining plans do not exist at this time. Therefore, the above seven areas need further study to verify whether or not mining techniques would satisfy the exemption or whether natural conditions would interfere or be affected by mining.

Data Source and Quality of Data

Same as those under the criterion.

Unsuitability Determinations

The areas to which the exceptions have been applied are determined to be acceptable pending further study, because insufficient data exist to declare them unsuitable or acceptable with no likely problems. The areas along Seminoe Reservoir, Medicine Bow River and Austin Creek remain unsuitable because they are also unacceptable by the multiple use analysis. The remainder of the area is determined to be acceptable with no likely problems.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

18. Municipal Watersheds

CRITERION

Federal lands which have been committed by the land management agency to use as municipal watersheds shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	-0-	-0-
Acceptable of further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

The Hanna URA and MFP were examined to determine if any area has been designated as a municipal watershed.

Findings

No designated municipal watersheds were found in the review area.

Data Sources and Quality of Data

The Hanna URA and MFP are both good sources of data for such a designation.

Unsuitability Determinations

All of the review area is determined to be acceptable with no likely problems.

EXCEPTIONS

Leasing may be allowed where:

1. The land management agency determines that mining will not adversely affect the watershed to any significant degree, and

2. The municipality or water users concur in the issuance of the lease.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre

Process

Not applicable.

Findings

Not applicable

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

All of the review area is determined to be acceptable with no likely problems under this criterion.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

19. National Resource Waters

CRITERION

Federal lands with National Resource Waters, as identified by States in their water quality management plans, and a buffer zone of Federal lands ¼ mile from the outer edge of the far banks of the water, shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

In Wyoming, national resource waters are those waters designated as Class I waters in the Wyoming Water Quality Rules and Regulations. This listing was examined for waters that might be within the review area.

Findings

None of the Wyoming Class I waters or proposed Class I waters are within the review area.

Data Sources and Quality of Data

Data were obtained from the Wyoming Water Quality Rules and Regulations, Chapter 1, Quality Standards for Wyoming Surface Waters. An additional listing of proposed additions to the Class I waters list presented to the Wyoming Environmental Quality Council on March 28, 1979, was also examined. These data are very current and are excellent.

Unsuitability Determinations

All of the review area is determined to be acceptable with no likely problems.

EXCEPTION

The buffer zone may be eliminated or reduced in size where the land management agency determines that it is not necessary to protect the National Resource Waters.

BLM Library
Denver Federal Center
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P.O. Box 25047
Denver, CO 80225

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	-0-	-0-
--with no likely problems	46,830	33,342,960

*Assuming an average of 712 tons/acre.

Process

The exception was not applied.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

All of the review area is determined to be acceptable with no likely problems under this criterion.

PUBLIC COMMENT

No public comments were received relative to application of this criterion.

20. State Lands Unsuitable

CRITERION

A buffer zone of Federal lands necessary to provide protection for any adjacent area designated as land unsuitable for mining by the State shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

The State of Wyoming was contacted by the BLM but has not identified any lands as unsuitable for mining. Neither has the state identified the need of any buffer zones on federal lands for the protection of state lands. Thus, the criterion was not applied.

Findings

Not applicable.

Data Source and Quality of Data

State of Wyoming.

Unsuitability Determinations

Not applicable.

EXCEPTION

The buffer zone may be modified or eliminated where the land management agency, in consultation with the State, determines that all or parts of the zone are not necessary to protect the designated area.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre

Process

Not applicable.

Findings

Not applicable.

Data Source and Quality of Data

Not applicable.

Unsuitability Determinations

Not applicable.

PUBLIC COMMENT

One comment questioned how BLM could apply this criterion when the state has not had time to designate "state lands unsuitable."

BLM contacted the state during the process and they indicated there were no state lands designated unsuitable. Thus, this criterion was not applied.

21. State Proposed Criteria

CRITERION

Federal lands in a State to which is applicable a criterion (i) proposed by the State, and (ii) adopted by rulemaking by the Secretary of the Interior, shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

The State of Wyoming presently has no criteria, therefore, this criterion has not been applied.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

Not applicable.

EXCEPTIONS

A lease may be issued for any area:

1. Irrespective of the applicability of the State-nominated criterion, if such criterion is adopted by the Secretary less than 12 months prior to the publication of the draft land use plan which applies to such area; or

2. Where the land management agency in consultation with the State determines that, although the criterion applies, mining will not adversely affect the value which the criterion would protect.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

The State of Wyoming presently has no criteria, therefore, this criterion has not been applied.

PUBLIC COMMENT

One comment questioned how BLM could apply this criterion when the State has not had adequate time to develop State proposed criteria.*

*BLM didn't apply this criterion, since the State does not have "State proposed criteria."

22. Prime Farmlands (Map 2-2)

CRITERION

When the land management agency, with the concurrence of the Secretary of Agriculture (Soil Conservation Service), identifies Federal lands having prime farmland soils, such lands shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	25	17,800
--with no likely problems	46,805	33,325,160

*Assuming an average of 712 tons/acre.

Process

The Soil Conservation Service (SCS) Carbon County Soil Survey of the area was examined for prime farmland mapping units which fell within the review area. The narratives and aerial photographs delineated with mapping units were used.

Findings

Three areas have soils identified as possible prime farmland soils: T. 22 N., R. 81 W., Section 6 and T. 23 N., R. 80 W., Sections 15, 16, 21, 22, and 28.

To be prime, a soil must be under irrigation; these areas are not irrigated. These soils also have some profiles with a pH greater than 8.4 which would also keep them from being prime. Because these soils do not meet all prime farmland soil conditions they are not considered prime.

The area around Austin Creek has yet not been surveyed. However, the soils along the creek might be prime and they are under irrigation by the private landowner.

Data Sources and Quality of Data

The data source was the SCS Carbon County Soil Survey and accompanying aerial photographs, and the SCS prime farmland soil mapping units. These are excellent data sources.

Unsuitability Determinations

The lands along Austin Creek are determined to be acceptable with inventory needs; the other areas are determined to be acceptable with no likely problems.

EXCEPTIONS

A lease may be issued when:

1. Conditions such as soil rockiness, angle of slope, or historic or other conditions leading to a negative determination under permanent regulations of the Office of Surface Mining (OSM) Reclamation and Enforcement are present; or

2. Scientific studies show that crop yields equivalent to premining crop yields on non-mined prime farmlands in the surrounding area under equivalent levels of management could be obtained and that an operator or potential operator could meet the soil reconstruction standards in Section 515(b)(7) of the Surface Mining Control and Reclamation Act (SMCRA) and OSM's permanent regulations.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	-0-	-0-
Acceptable for further consideration for coal development:		
--pending study	-0-	-0-
--with inventory needs	25	17,800
--with no likely problems	46,805	33,325,160

*Assuming an average of 712 tons/acre.

Process

The exceptions were not applied.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

Under this criterion, the area along Austin Creek is determined to be acceptable with inventory needs; the remainder of the review area is determined to be acceptable with no likely problems.

PUBLIC COMMENT

The only comment received relative to this criterion was a question which asked, "Who determines if an area meets the criterion for prime farmland?"

BLM determined the prime farmland areas using the SCS soil survey of the area. No areas were determined to be unsuitable.

3. Alluvial Valley Floors (Map 2-10)

Federal lands identified by the land management agency, with the concurrence of the State in which they are located, as alluvial valley floors according to the definition and standards of the SMCRA, the regulations, final alluvial valley floor guidelines, and approved State programs, where mining would interrupt, discontinue, or preclude farming, shall be considered unsuitable for coal mining. Additionally, when mining Federal land outside an alluvial valley floor would materially damage the quantity or quality of water in surface or underground water systems that would supply alluvial valley floors, that land shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	3,310	2,356,720
Acceptable for further consideration for coal development:		
--pending study	15,333	10,917,096
--with inventory needs	-0-	-0-
--with no likely problems	28,187	20,069,144

*Assuming an average of 712 tons/acre.

Process

We have followed a somewhat different procedure for applying this criterion. If the draft technical guidelines developed by OSM were to be used, we would be unable to reach any conclusions within the time frame of this study. The guidelines used in this determination are described fully in Instruction Memoranda WY-79-90, WY-79-90 Change 1 and WO-79-76. To determine if the valley in question is a possible or probable AVF, one of the following standards would have to be met:

Step 2 Standards:

1. Drainage basin is greater than 2 square miles.
2. Cultivated, hayed, or farmed.
3. Valley width is greater than 300 feet and stream channel shows red on color infrared (IR) and stream channel shows on USGS 7½ minute quadrangle.

If any one of the standards applies, make the interim determination that the valley may be an AVF.

To distinguish between the "possible" and "probable" AVFs, the following standards were used:

Step 3 Standards:

1. Geomorphic valley width is greater than ¼ mile.
2. Hayed, seeded, or cultivated.
3. Flood irrigated.
4. Significant portions of geomorphic valley show up red on color IR and perennial stream (USGS 7½ minute quadrangle).

Standard number 1 (Step 3) is a necessary condition. The valley must also meet at least two of standards 2 through 4 to be designated a probable AVF.

The geomorphic valleys of drainages in the Hanna Basin Area were defined using USGS 7½ minute topographic maps, black and white aerial photographs--scales varying from 2 to 4 inches per mile--and a soil survey started in 1976 by the Soil Conservation Service. The standards described in the previously mentioned instruction memos were then applied to these valleys using the same maps and photos used in defining the valleys, color infrared aerial photographs, and a false color composite landsat image with MSS bands 4, 5, and 7.

Findings

The Austin Creek Valley from the line separating T. 24 N. and T. 25 N. to the point where it enters Seminoe Reservoir is described as follows:

1. Drainage basin is greater than 2 square miles.
2. Cultivated, hayed, or farmed.
3. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

Having met the initial standards which placed Austin Creek Valley into the possible category, the following standards were applied:

1. Geomorphic valley width is greater than ¼ mile.
2. Hayed, seeded, or cultivated.
3. Flood irrigated.
4. Significant portions of geomorphic valley show up red on color IR and perennial stream (USGS 7½ minute quadrangle).

According to the standards used, this portion of Austin Creek Valley is concluded to be a likely AVF.

The Medicine Bow Valley from the line separating T. 23 N. and T. 24 N., R. 80 W. to the point where it enters Seminoe Reservoir is described as follows:

Step 2 Standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

Step 3 Standards:

1. Geomorphic valley width is greater than ¼ mile.

2. Significant portions of geomorphic valley show up red on color IR and perennial stream (USGS 7½ minute quadrangle).

In all probability, with high quality IR aerial photographs, the river valley would appear red immediately adjacent to the channel for its entire course. According to the standards applied, this portion of the Medicine Bow River Valley is a likely alluvial valley floor.

Pine Draw from Section 16, T. 23 N., R. 80 W. to the eastern edge of the Review Area is described as follows:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

Therefore, Pine Draw falls into the possible group for AVFs.

Step 3 Standards:

1. Geomorphic valley width is greater than ¼ mile.

Application of the Step 3 standards revealed the following: Pine Draw meets item #1 and could, with the aid of better quality IR aerial photographs, comply with item #4. Therefore, this segment of Pine Draw falls into the possible group of AVFs.

Hanna Draw from Section 29, T. 23 N., R. 81 W. to its confluence with Medicine Bow River is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

According to the Step 2 standards, this portion of Hanna Draw falls into the possible category of AVFs.

1. Geomorphic valley width is greater than ¼ mile.

According to the Step 3 standards, this portion of Hanna Draw remains in the possible group of AVFs.

Standpipe Draw from Section 32, T. 22 N., R. 81 W. to its confluence with Big Ditch is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.
2. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 2 standards places this stream into the possible/probable group of AVFs. Continuing the process, Step 3 standards are applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.
2. Significant portions of geomorphic valley show up red on color IR (USGS 7½ minute quadrangle).

After application of Step 3 standards is accomplished, it is determined that this stream remains in the possible group of AVFs.

Big Ditch from Section 15, T. 22 N., R. 81 W. to the point at which it enters Seminoe Reservoir is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.
2. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 2 standards places this stream into the possible/probable category of AVFs. Step 3 standards are then applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.
2. Significant portions of geomorphic valley show up red on color IR (USGS 7½ minute quadrangle).

This stream remains in the possible category of AVFs.

St. Mary's Creek from Section 8, T. 21 N., R. 81 W. to Section 5, T. 21 N., R. 83 W. is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.
2. Valley width is greater than 300 feet and stream channel shows red on color IR, and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 2 standards places this stream into the possible category of AVFs. Step 3 standards are then applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.
2. Significant portions of geomorphic valley show up red on color IR (USGS 7½ minute quadrangle).

This portion of this stream remains in the possible category of AVFs.

St. Mary's Ditch from Section 18, T. 22 N., R. 83 W. to the point where it enters Seminoe Reservoir is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.
2. Valley width is greater than 300 feet and stream channel shows on USGS 7½ minute quadrangle.

Application of Step 2 standards places this stream into the possible category of AVFs. Step 3 standards are then applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.
2. Significant portions of geomorphic valley show up red on color IR (USGS 7½ minute quadrangle).

This stream remains in the possible category of AVFs.

Middle Ditch from Section 26, T. 22 N., R. 82 W. to its point of entry into Seminoe Reservoir is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 3 standards places this stream into the possible category of AVFs. Step 3 standards are then applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.

2. USGS 7½ minute quadrangle.

This stream remains in the possible category of AVFs.

North Ditch from Section 15, T. 23 N., R. 82 W. to its point of entry into Seminoe Reservoir is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 2 standards places this stream into the possible category of AVFs. Step 3 standards are then applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.

After application of Step 3 standards, it is concluded that this stream remains in the possible category of AVFs.

Taylor Draw from the middle of Section 23, T. 22 N., R. 84 W. to Section 29, T. 22 N., R. 83 W., is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows on USGS 7½ minute quadrangle.

This places this stream into the possible group of AVFs. Step 3 standards are then applied and are described as follows:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.

The stream, after application of Step 3 standards, remains in the possible category of AVFs.

Percy Creek from Section 11, T. 21 N., R. 81 W., to its confluence with St. Mary's Creek in Section 7, T. 21 N., R. 81 W., is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 2 standards places this stream into the possible category of AVFs. Step 3 standards are then applied and are described as follows:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.

After Step 3 standards are applied, the stream remains in the possible category of AVFs.

Dixie Draw from Section 18, T. 23 N., R. 80 W. to the point of origin for Pine Draw in Section 16, T. 23 N., R. 80 W. is described as follows:

Step 2 standards:

1. Drainage basin is greater than 2 square miles.

2. Valley width is greater than 300 feet and stream channel shows on USGS 7½ minute quadrangle.

Application of the Step 2 standards places this stream into the possible category of AVFs. Step 3 standards are then applied:

Step 3 standards:

1. Geomorphic valley width is greater than ¼ mile.

This stream remains in the possible category of AVFs.

There are other drainages and tributaries of drainages that met standard #1 of Step 2 (drainage basin greater than 2 square miles), but these drainages have relatively narrow geomorphic valleys, no apparent water supply for irrigation, and stream channels did not show red on color IR. Therefore, these drainages have been placed into the unlikely AVF category.

Data Sources and Quality of Data

7½ minute USGS topographic quadrangle maps
BLM land status maps
BLM Master Title Plats
Landsat SST Imagery
Color IR aerial photographs
Medicine Bow Resource Area URA--Step 3
Soil Conservation Survey photographs

These sources are excellent for initial delineation of AVFs, but color IR was not of sufficient quality to determine water availability; no field measurements exist to make final AVF determinations.

Unsuitability Determinations

Unsuitable

1. The Austin Creek Valley from the line separating T. 24 N. and T. 25 N. to the point where it enters Seminoe Reservoir is determined to be unsuitable.

2. The Medicine Bow River Valley from the line separating T. 23 N. and T. 24 N., R. 80 W., to the point where it enters Seminoe Reservoir is determined to be unsuitable.

Acceptable Pending Study

A 1mile buffer zone around valleys 1 and 2 above is determined to be acceptable pending study.

3. Pine Draw from Section 16, T. 23 N., R. 80 W., to the eastern edge of the review area.

4. Hanna Draw from Section 29, T. 23 N., R. 81 W., to its confluence with Medicine Bow River.

5. Standpipe Draw from Section 32, T. 22 N., R. 81 W., to its confluence with Big Ditch.

6. Big Ditch from Section 15, T. 22 N., R. 81 W., to the point at which it enters Seminoe Reservoir.

7. St. Mary's Creek from Section 8, T. 21 N., R. 81 W., to Section 5, T. 21 N., R. 83 W.

8. St. Mary's Ditch from Section 18, T. 22 N., R. 83 W., to the point where it enters Seminoe Reservoir.

9. Middle Ditch from Section 26, T. 22 N., R. 82 W., to its point of entry into Seminoe Reservoir.

10. North Ditch from Section 15, T. 23 N., R. 82 W., to its point of entry into Seminoe Reservoir.

11. Taylor Draw from the middle of Section 23, T. 22 N., R. 84 W., to Section 29, T. 22 N., R. 83 W.

12. Percy Creek from Section 11, T. 21 N., R. 81 W., to its confluence with St. Mary's Creek in Section 7, T. 21 N., R. 81 W.

13. Dixie Draw from Section 18, T. 23 N., R. 80 W., to the point of origin for Pine Draw in Section 16, T. 23 N., R. 80 W.

A ¼-mile buffer zone around valleys 3 thru 13 above is determined to be acceptable pending study.

Acceptable with no likely problems.

All other drainages and tributaries are determined to be acceptable with no likely problems.

EXCEPTION

A lease may be issued where mining would not interrupt, discontinue, or preclude farming on land to which the first sentence of the criterion applies.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable	3,310	2,356,720
Acceptable for further consideration for coal development:		
--pending study	15,333	10,917,096
--with inventory needs	-0-	-0-
--with no likely problems	28,187	20,069,144

*Assuming an average of 712 tons/acre.

Process

Those areas that were determined to be unsuitable, by the criterion but were determined to be acceptable through multiple use evaluation, were reexamined to see if the exception could be applied.

Findings

Areas determined to be unsuitable by the criterion were determined to be still unsuitable. The two areas affected are along Austin Creek and the Medicine Bow River.

Data Sources and Quality of Data

Data sources were the same as those used for the initial criterion determination.

Unsuitability Determinations

Unsuitable

1. The Austin Creek Valley from the line separating T. 24 N. and T. 25 N. to the point where it enters Seminoe Reservoir is determined to be unsuitable.
2. The Medicine Bow River Valley from the line separating T. 23 N. and T. 24 N., R. 80 W., to the point where it enters Seminoe Reservoir is determined to be unsuitable.

Acceptable Pending Further Study

A 1-mile buffer zone around valleys 1 and 2 above is determined to be acceptable pending study.

3. Pine Draw from Section 16, T. 23 N., R. 80 W., to the eastern edge of the review area.
4. Hanna Draw from Section 29, T. 23 N., R. 81 W., to its confluence with Medicine Bow River.
5. Standpipe Draw from Section 32, T. 22 N., R. 81 W., to its confluence with Big Ditch.
6. Big Ditch from Section 15, T. 22 N., R. 81 W., to the point at which it enters Seminoe Reservoir.
7. St. Mary's Creek from Section 8, T. 21 N., R. 81 W., to Section 5, T. 21 N., R. 83 W.
8. St. Mary's Ditch from Section 18, T. 22 N., R. 83 W., to the point where it enters Seminoe Reservoir.

9. Middle Ditch from Section 26, T. 22 N , R. 82 W., to its point of entry into Seminoe Reservoir.

10. North Ditch from Section 15, T. 23 N., R. 82 W., to its point of entry into Seminoe Reservoir.

11. Taylor Draw from the middle of Section 23, T. 22 N., R. 84 W., to Section 29, T. 22 N., R. 83 W.

12. Percy Creek from Section 11, T. 21 N., R. 81 W., to its confluence with St. Mary's Creek in Section 7, T. 21 N., R. 81 W.

13. Dixie Draw from Section 18, T. 23 N., R. 80 W., to the point of origin for Pine Draw in Section 16, T. 23 N., R. 80 W.

A ¼-mile buffer zone around the preceding valleys (3 through 13) is determined to be acceptable pending study.

Acceptable with no likely problems.

All other drainages and tributaries are determined to be acceptable with no likely problems.

PUBLIC COMMENT

Comments related to this criteria question the methodology used to identify the alluvial valley floors and the determination of unsuitable areas. The comments also point out that State concurrence, as required by the criterion, is lacking.

BLM (Wyoming) developed the alternative methodology because lack of time and data precluded use of Office of Surface Mining (OSM) and Wyoming Department of Environmental Quality (DEQ) guidelines.*

*BLM submitted the methodology and findings to OSM and DEQ for review. DEQ did not concur and OSM has not responded.

24. Reclaimability

CRITERION

As information regarding reclaimability on a local or regional basis becomes available, the land management agency shall use such information to determine if areas of Federal lands are reclaimable to the standards of SMCRA, the regulations, and approved State programs. Examples of information on reclaimability would be soil studies, hydrologic studies, and studies concerning revegetation. If any area is determined not to be so reclaimable, such area shall be considered unsuitable for coal mining.

Summary of Results

	Federal Coal	
	Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

This criterion requires information on hydrologic, soil, and revegetation studies that have not been done by either the federal government or the coal companies. There are several studies in hydrology and soil classification, but the studies are in the beginning stages, therefore no pertinent information can be assimilated from them.

It has not in fact been proven that reclamation will restore areas to as good as or better than before mining. If reclamation techniques could be developed to a high degree, mitigation could be incorporated in future efforts.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

Not applicable.

EXCEPTIONS

A lease may be issued upon presentation of information which contains results of studies showing that reclamation is possible to the standards of the SMCRA, OSM's permanent regulations and approved State programs, including State regulation.

Summary of Results

	Federal Coal Acres	Tons*
Unsuitable		
Acceptable for further consideration for coal development:		
--pending study		
--with inventory needs		
--with no likely problems		

*Assuming an average of 712 tons/acre.

Process

Not applicable.

Findings

Not applicable.

Data Sources and Quality of Data

Not applicable.

Unsuitability Determinations

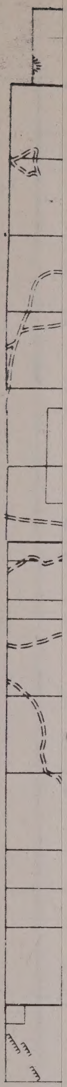
Not applicable.

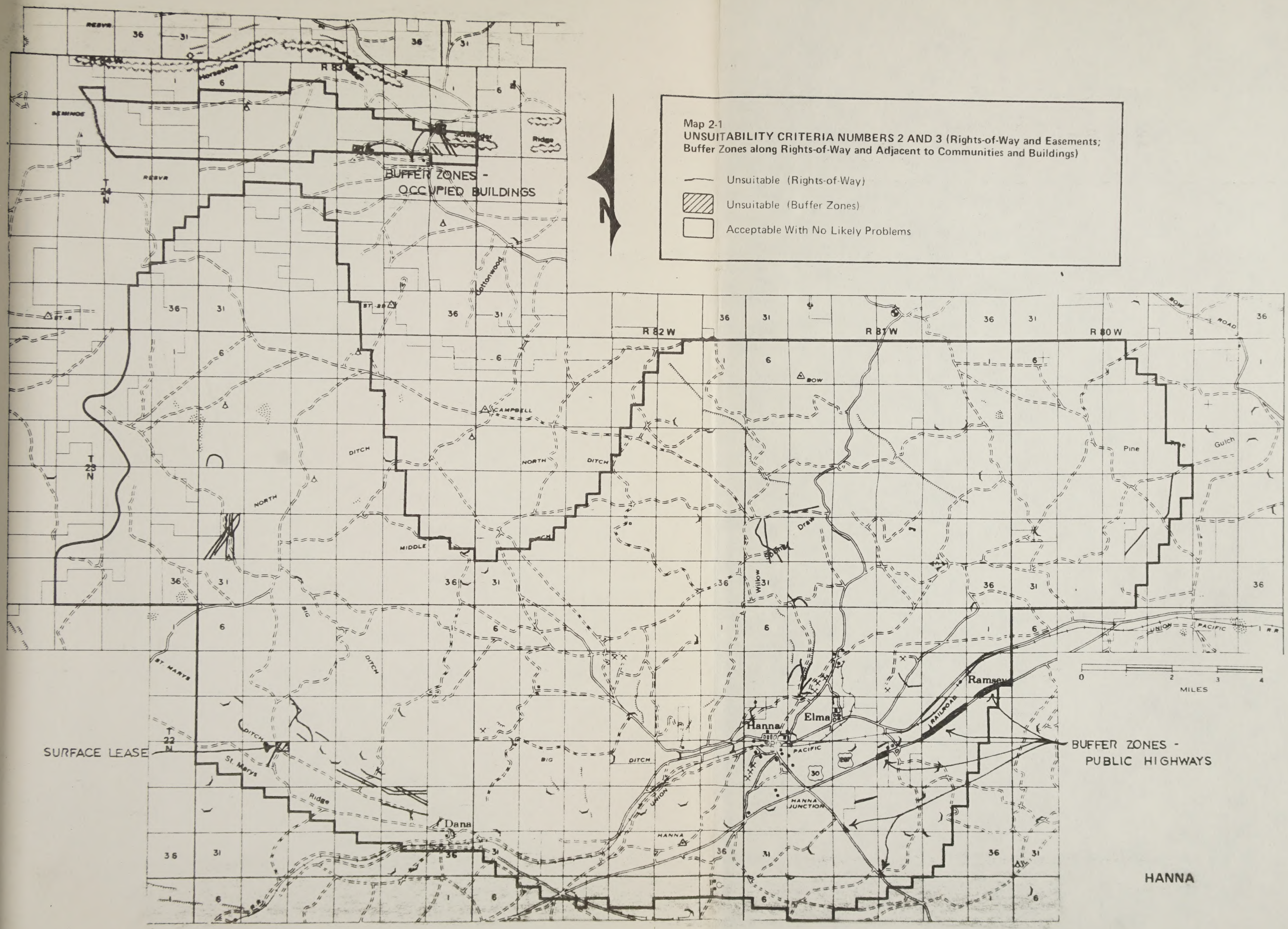
The lack of hydrologic, soils, and revegetation data has precluded the application of this criterion.

PUBLIC COMMENT

The comments on this criterion related to the reclaimability of the area. Some comments indicated reclamation is possible while others questioned whether reclamation success has been demonstrated.

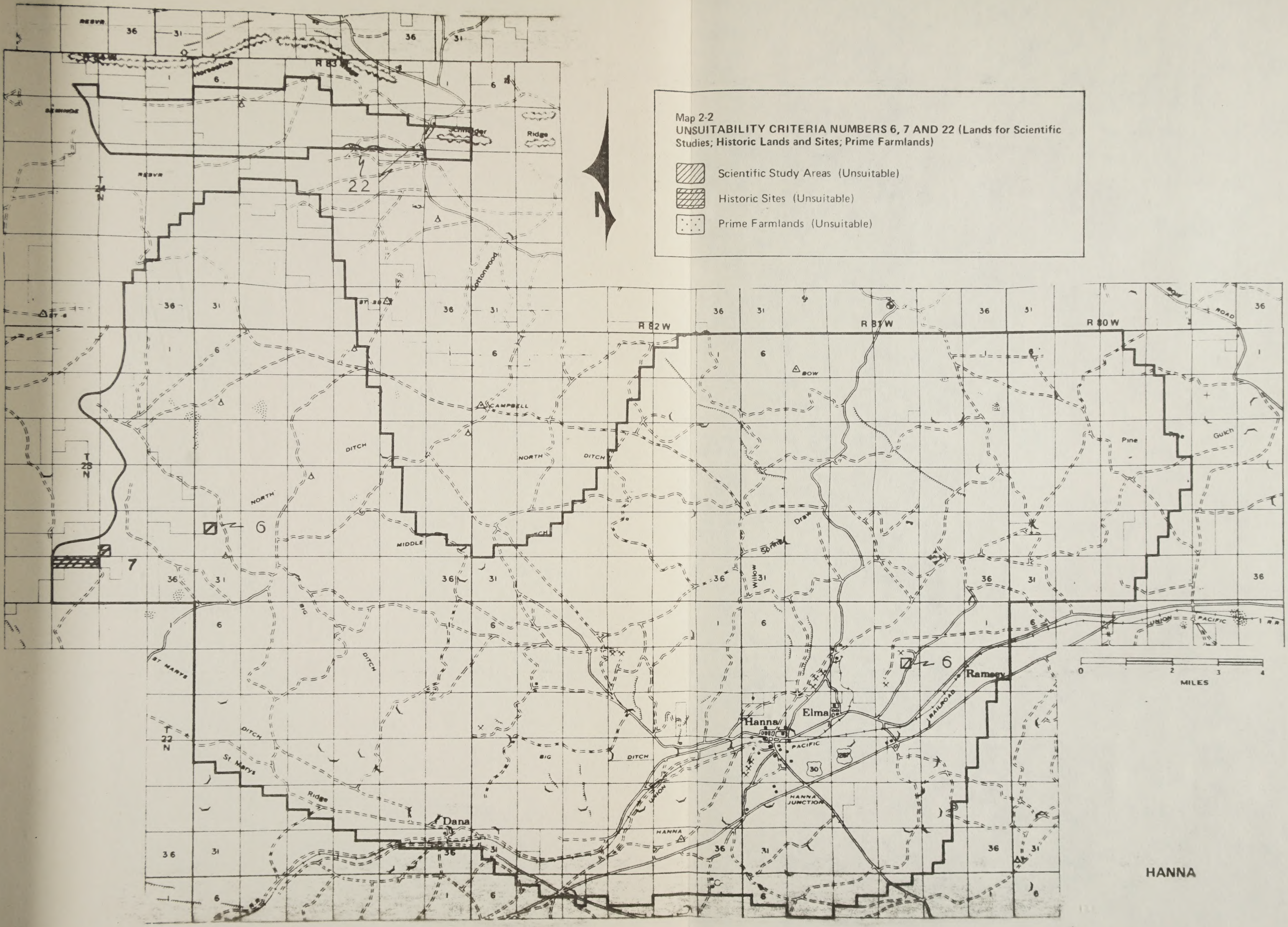
BLM did not apply this criterion due to a lack of data at this time.





Map 2-1
UNSUITABILITY CRITERIA NUMBERS 2 AND 3 (Rights-of-Way and Easements; Buffer Zones along Rights-of-Way and Adjacent to Communities and Buildings)

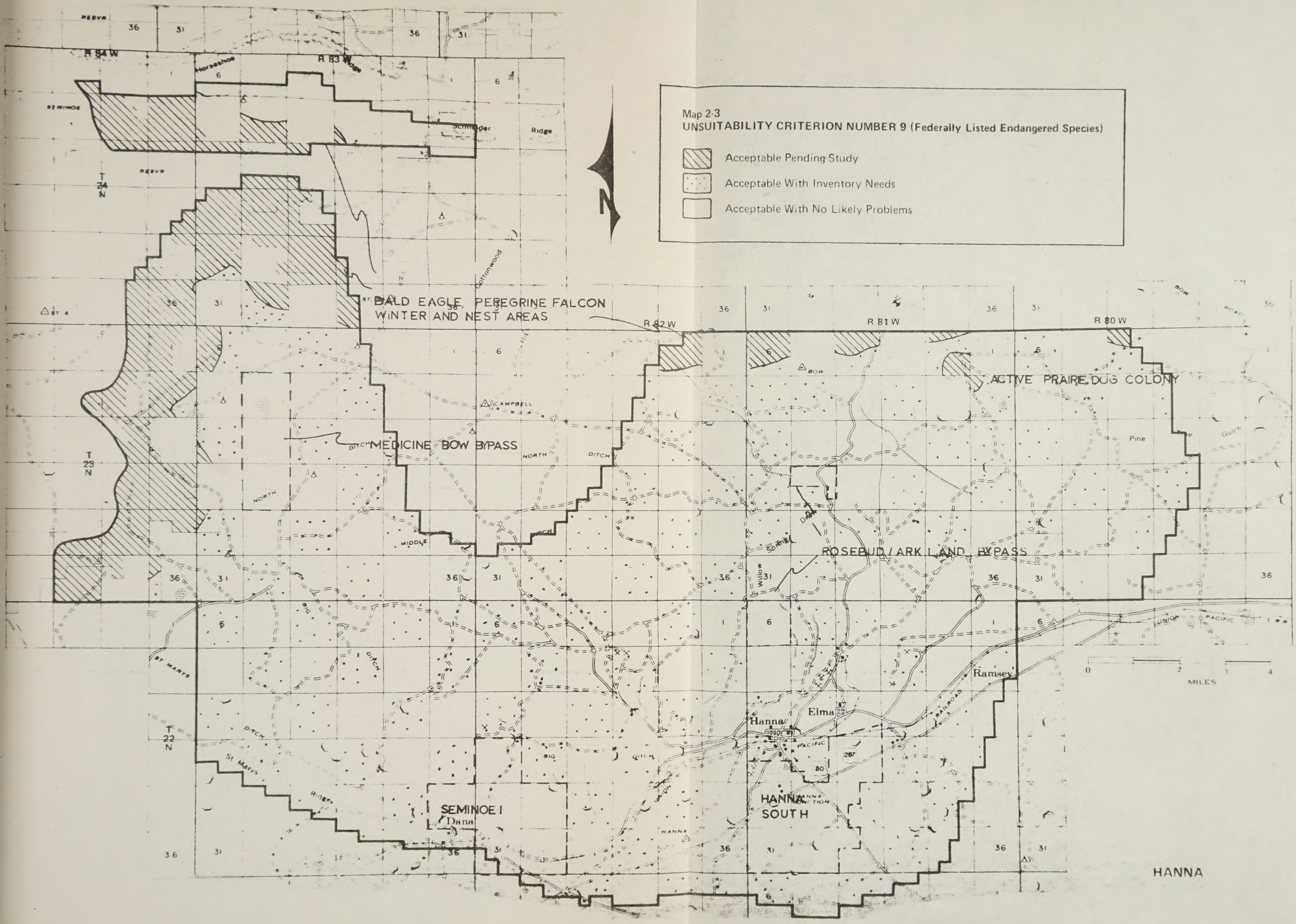
Unsuitable (Rights-of-Way)
Unsuitable (Buffer Zones)
Acceptable With No Likely Problems
BUFFER ZONES - OCCUPIED BUILDINGS
SURFACE LEASE
BUFFER ZONES - PUBLIC HIGHWAYS
N
T 24 N
T 23 N
T 22 N
R 83 W
R 82 W
R 81 W
R 80 W
Horseshoe
Ridge
Cottonwood
CAMPBELL
NORTH
DITCH
MIDDLE
BIG
ST MARYS
St Marys
Ridge
Dana
Hanna
Elma
Ramsey
PACIFIC
UNION
RAILROAD
HANNA JUNCTION
Willow
Draw
Pine
Gulch
BOW
ROAD
UNION PACIFIC RR
30
287
0
1
2
3
4
MILES
HANNA



Map 2-2

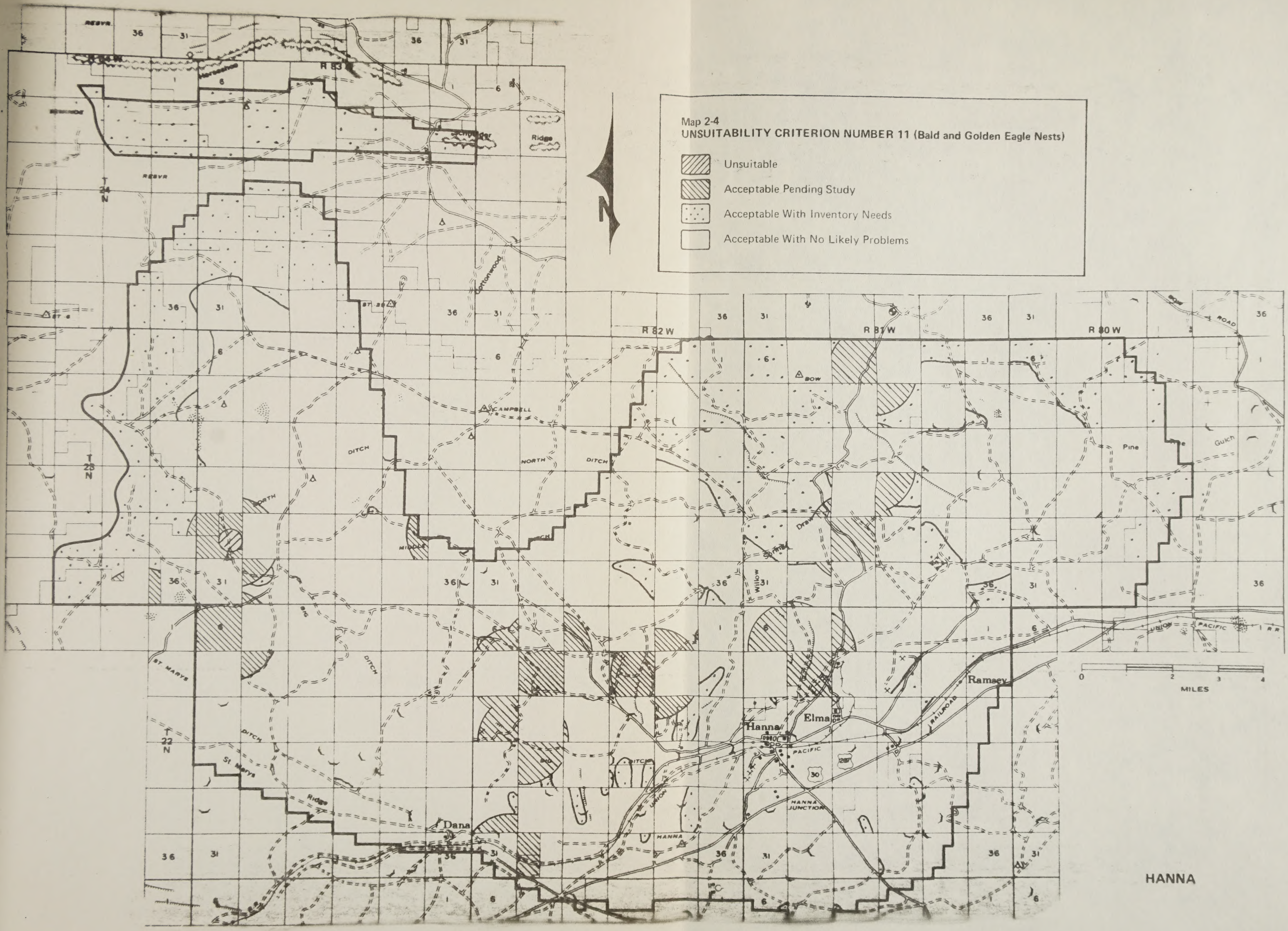
UNSUITABILITY CRITERIA NUMBERS 6, 7 AND 22 (Lands for Scientific Studies; Historic Lands and Sites; Prime Farmlands)

▨ Scientific Study Areas (Unsuitable)
▨ Historic Sites (Unsuitable)
⁘ Prime Farmlands (Unsuitable)
N
R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
22
6
7
6
RESVR
Horseshoe
Ridge
Cottonwood
CAMPBELL
BOW
NORTH DITCH
MIDDLE
Pine
Gulch
Willow
Spring
Draw
ST MARYS
St Marys
Ridge
BIG DITCH
UNION PACIFIC R R
RAILROAD
Hanna
Elma
Ramsey
Dana
HANNA JUNCTION
HANNA
30
287
0
1
2
3
4
MILES
HANNA



Map 2-3
UNSUITABILITY CRITERION NUMBER 9 (Federally Listed Endangered Species)

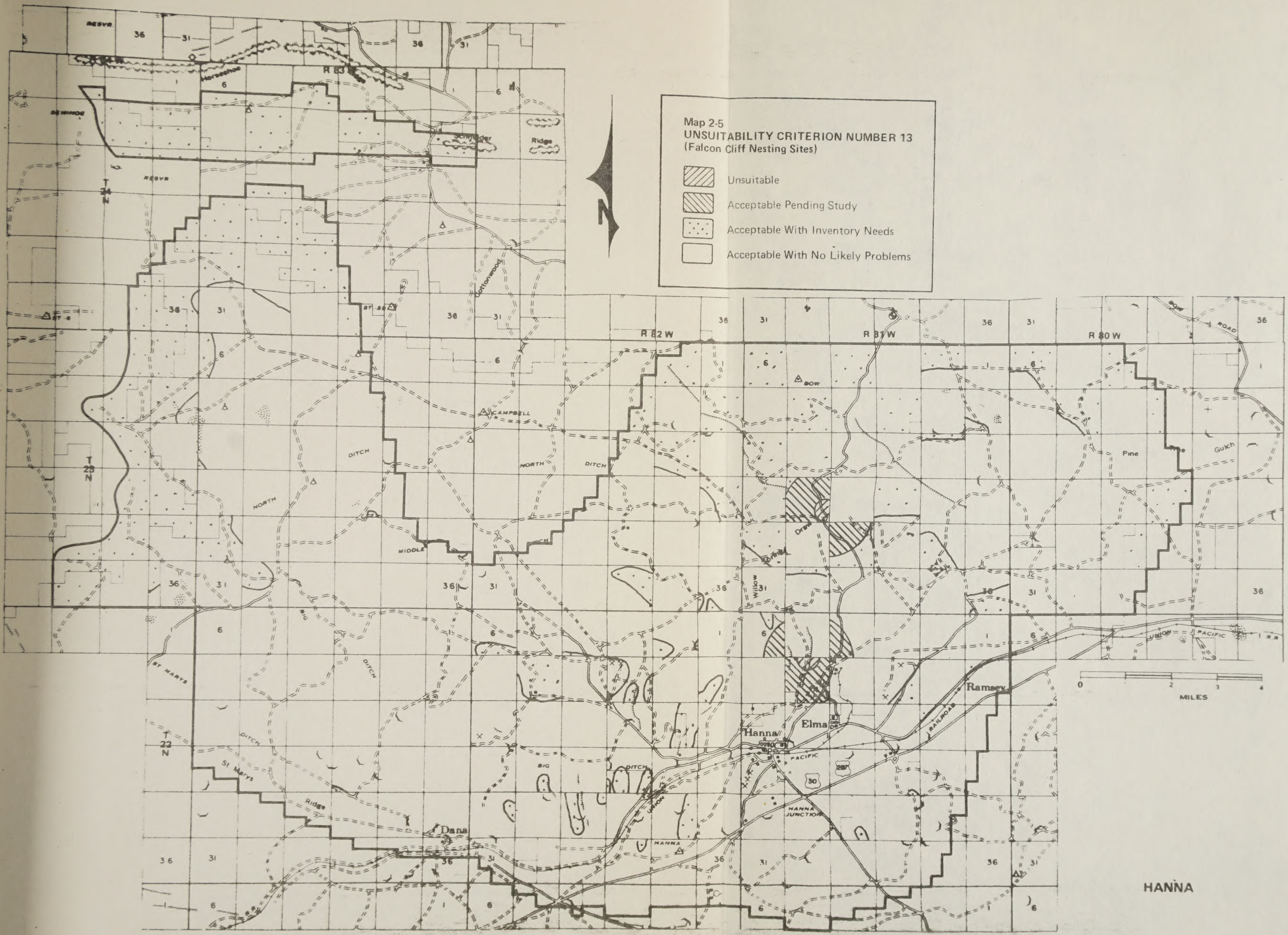
▨ Acceptable Pending Study
⁙ Acceptable With Inventory Needs
☐ Acceptable With No Likely Problems
N
BALD EAGLE, PEREGRINE FALCON
WINTER AND NEST AREAS
ACTIVE PRAIRIE DOG COLONY
MEDICINE BOW BYPASS
ROSEBUD/ARK LAND BYPASS
SEMINOE I
HANNA SOUTH
Hanna
Elma
Ramsey
Dana
R 84 W
R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Horseshoe
Ridge
Schneider
Cottonwood
Campbell
Bow
Pine
Gulch
Willow
Spring
North
Ditch
Middle
Big
St Marys
Union Pacific R R
Railroad
287
30
0
2
4
MILES
HANNA



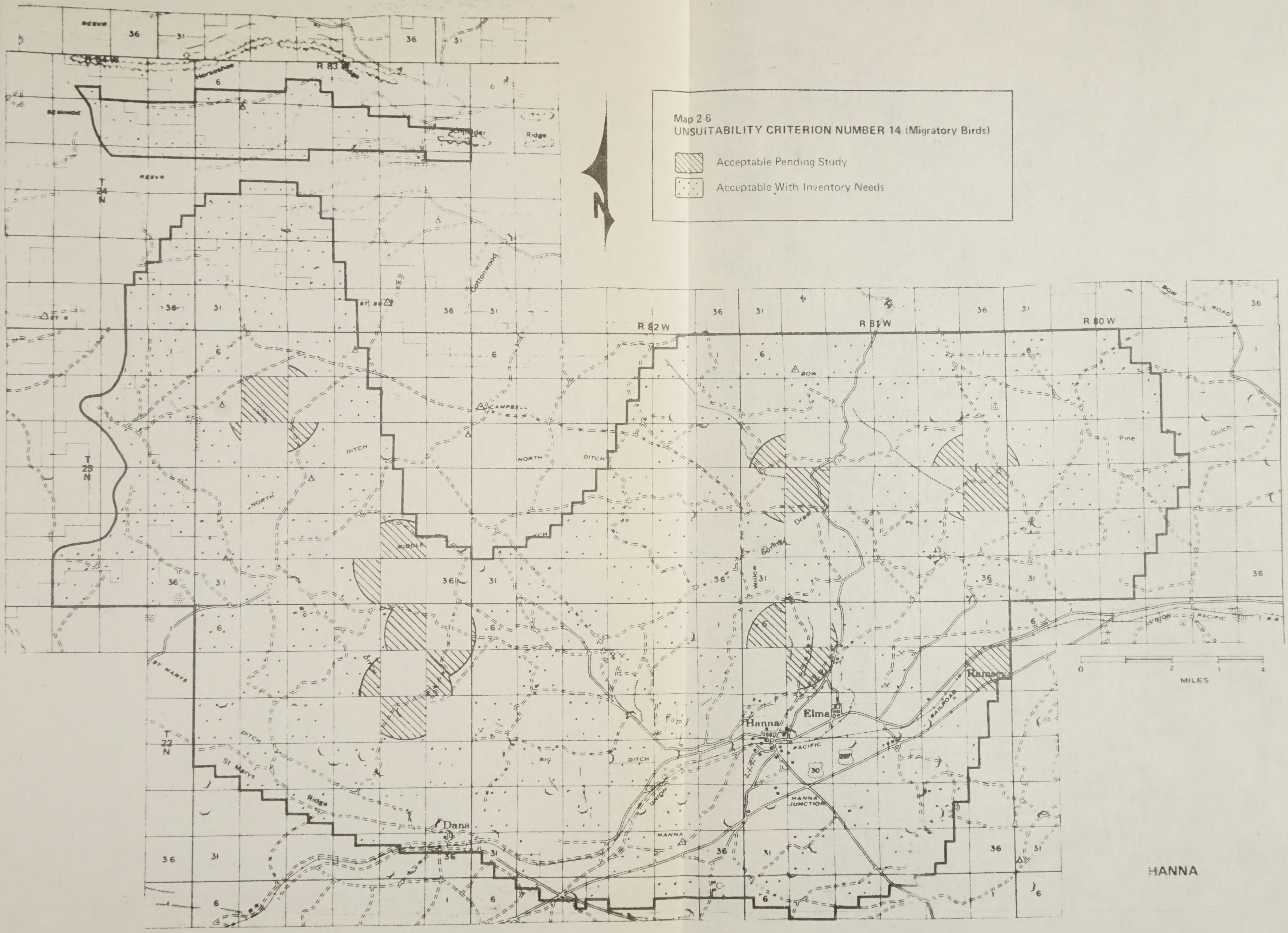
Map 2-4
UNSUITABILITY CRITERION NUMBER 11 (Bald and Golden Eagle Nests)

- ▨ Unsuitable
- ▧ Acceptable Pending Study
- ⁘ Acceptable With Inventory Needs
- ☐ Acceptable With No Likely Problems

RESVR
R 83 W
Horseshoe
Schneider
Ridge
RESVR
T 24 N
Cottonwood
ST 36
CAMPBELL
DITCH
NORTH
DITCH
NORTH
MIDDLE
R 82 W
R 81 W
R 80 W
BOW
ROAD
Pine
Gulch
Draw
Willow
T 23 N
BIG
DITCH
ST MARYS
T 22 N
DITCH
St Marys
Ridge
BIG
DITCH
UNION
PACIFIC
UNION PACIFIC R R
Ramsey
RAILROAD
Elma
Hanna
PACIFIC
30
287
HANNA JUNCTION
HANNA
Dana
0 1 2 3 4
MILES
HANNA


Map 2-5
UNSUITABILITY CRITERION NUMBER 13
(Falcon Cliff Nesting Sites)

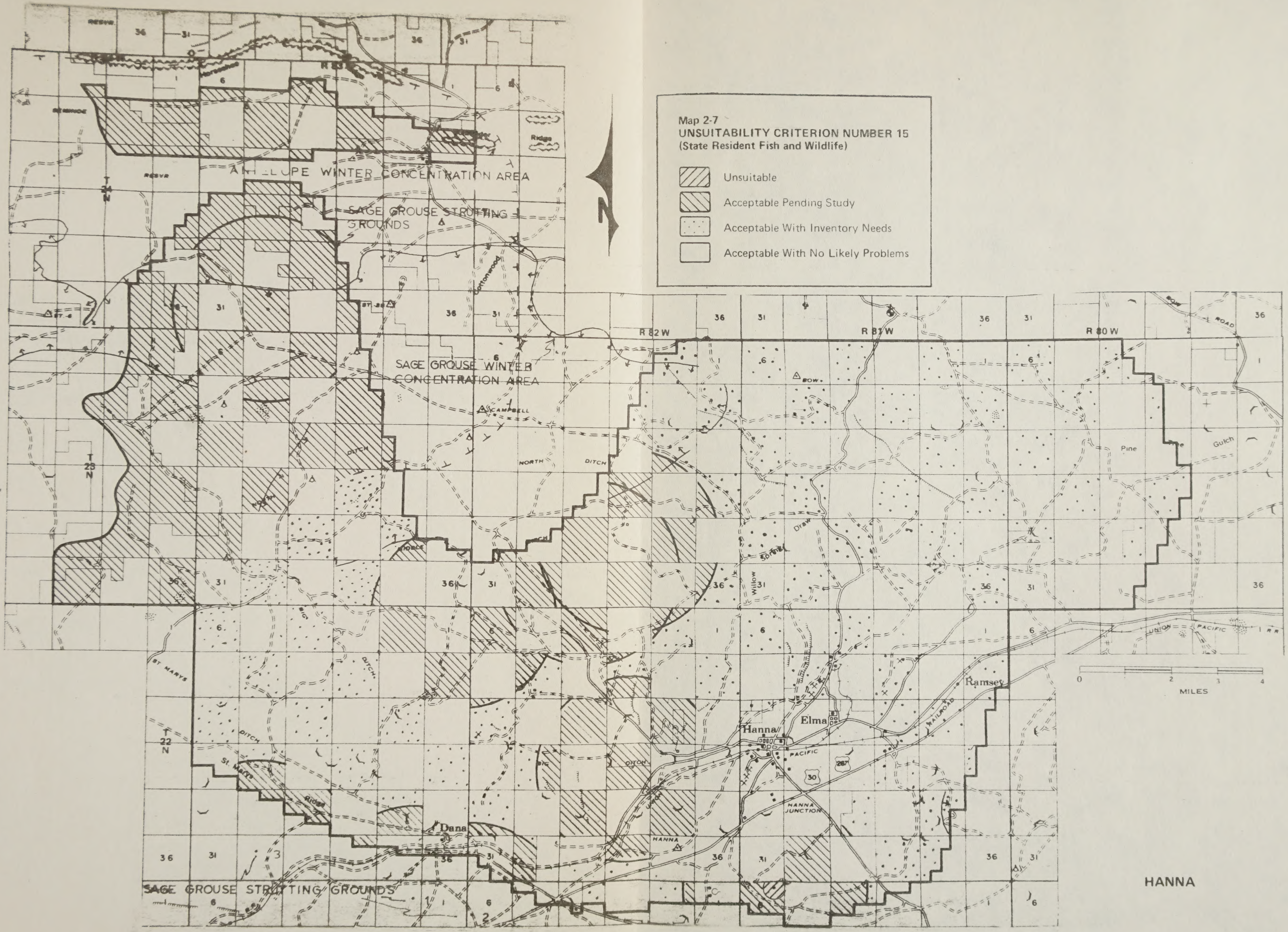
▨ Unsuitable
▧ Acceptable Pending Study
⁘ Acceptable With Inventory Needs
☐ Acceptable With No Likely Problems
N
R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Horseshoe
Schneider
Ridge
RESVR
Cottonwood
CAMPBELL
NORTH
DITCH
MIDDLE
BIG
ST MARYS
St Marys
Ridge
BOW
Pine
Gulch
Willow
Draw
Dana
Hanna
Elma
Ramsey
HANNA JUNCTION
UNION
PACIFIC
R.R.
RAILROAD
30
287
HANNA
0
2
3
4
MILES
HANNA


Map 2-6
UNSUITABILITY CRITERION NUMBER 14 (Migratory Birds)

▨ Acceptable Pending Study

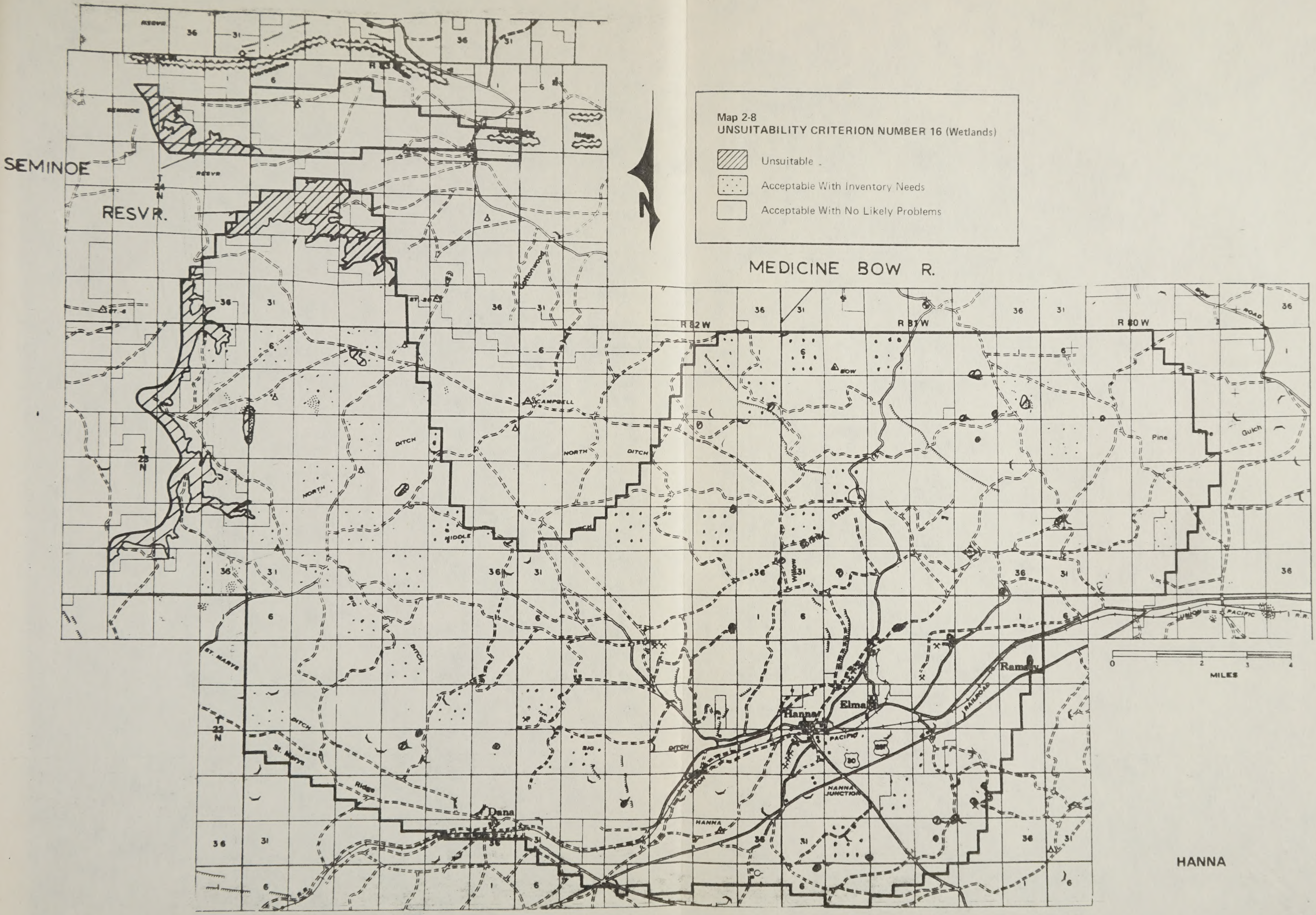
⁘ Acceptable With Inventory Needs

R 84 W
R 83 W
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
RESVR
Horseshoe Ridge
Schneider Ridge
Ridge
Seminoe
Cottonwood
Campbell
North Ditch
North
Biddle Ditch
Big Ditch
St Marys Ditch
St Marys Ridge
Bow
Willow
Draw
Pine Gulch
Union Pacific R R
Hanna
Elma
Dana
Ramsey
Hanna Junction
Pacific
Railroad
30
287
36
31
6
1
0
2
4
MILES
HANNA



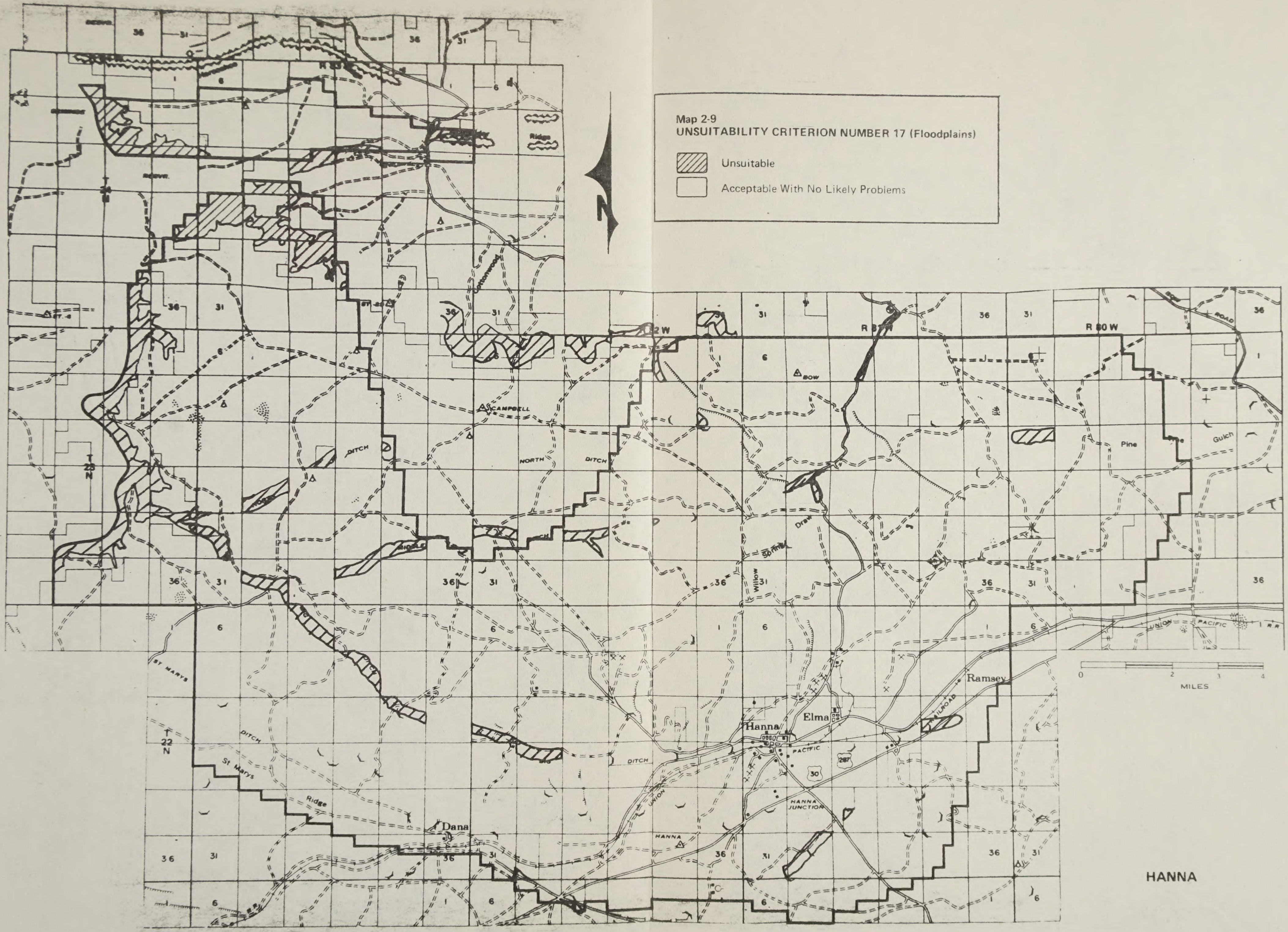
Map 2-7
UNSUITABILITY CRITERION NUMBER 15
(State Resident Fish and Wildlife)

▨ Unsuitable
▨ Acceptable Pending Study
⁘ Acceptable With Inventory Needs
☐ Acceptable With No Likely Problems
ANTELOPE WINTER CONCENTRATION AREA
SAGE GROUSE STRUTTING GROUNDS
SAGE GROUSE WINTER CONCENTRATION AREA
SAGE GROUSE STRUTTING GROUNDS
N
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
Hanna
Elma
Ramsey
Dana
HANNA JUNCTION
UNION PACIFIC
NORTH DITCH
St. Marys Ridge
Willow
Sorenal Draw
Pine Gulch
Cottonwood
BOW
CAMPBELL
0 1 2 3 4
MILES
HANNA



Map 2-8
UNSUITABILITY CRITERION NUMBER 16 (Wetlands)

▨ Unsuitable
Acceptable With Inventory Needs
☐ Acceptable With No Likely Problems
SEMINOE RESVR.
MEDICINE BOW R.
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
NORTH DITCH
MIDDLE
ST. MARYS DITCH
BIG DITCH
Campbell
Bow
Pine Gulch
Cottonwood
Willow
Drew
Hanna
Elma
Ramsey
Dana
HANNA JUNCTION
UNION PACIFIC R.R.
RAILROAD
30
0 1 2 3 4
MILES
HANNA

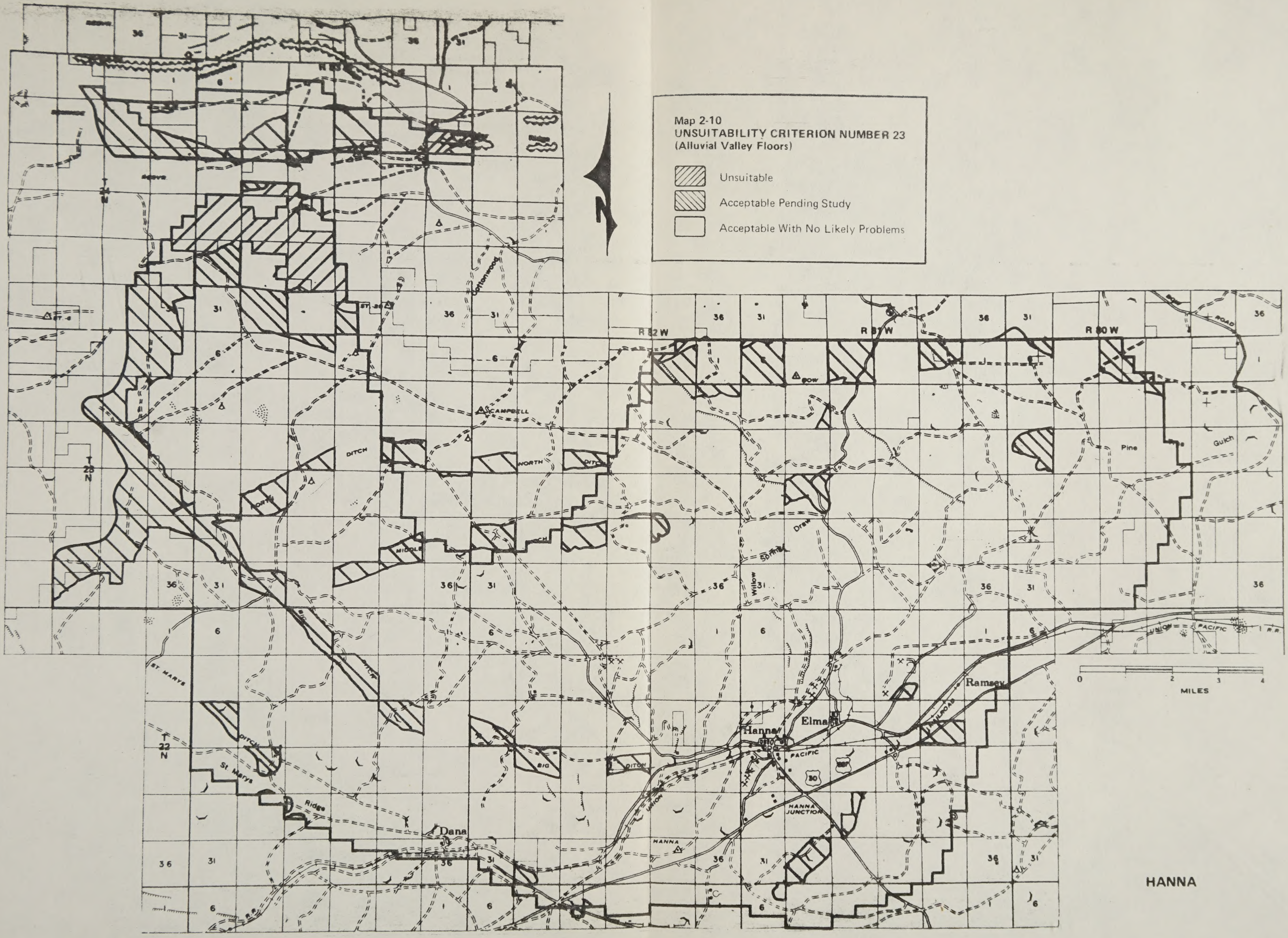


Map 2-9
UNSUITABILITY CRITERION NUMBER 17 (Floodplains)

▨ Unsuitable

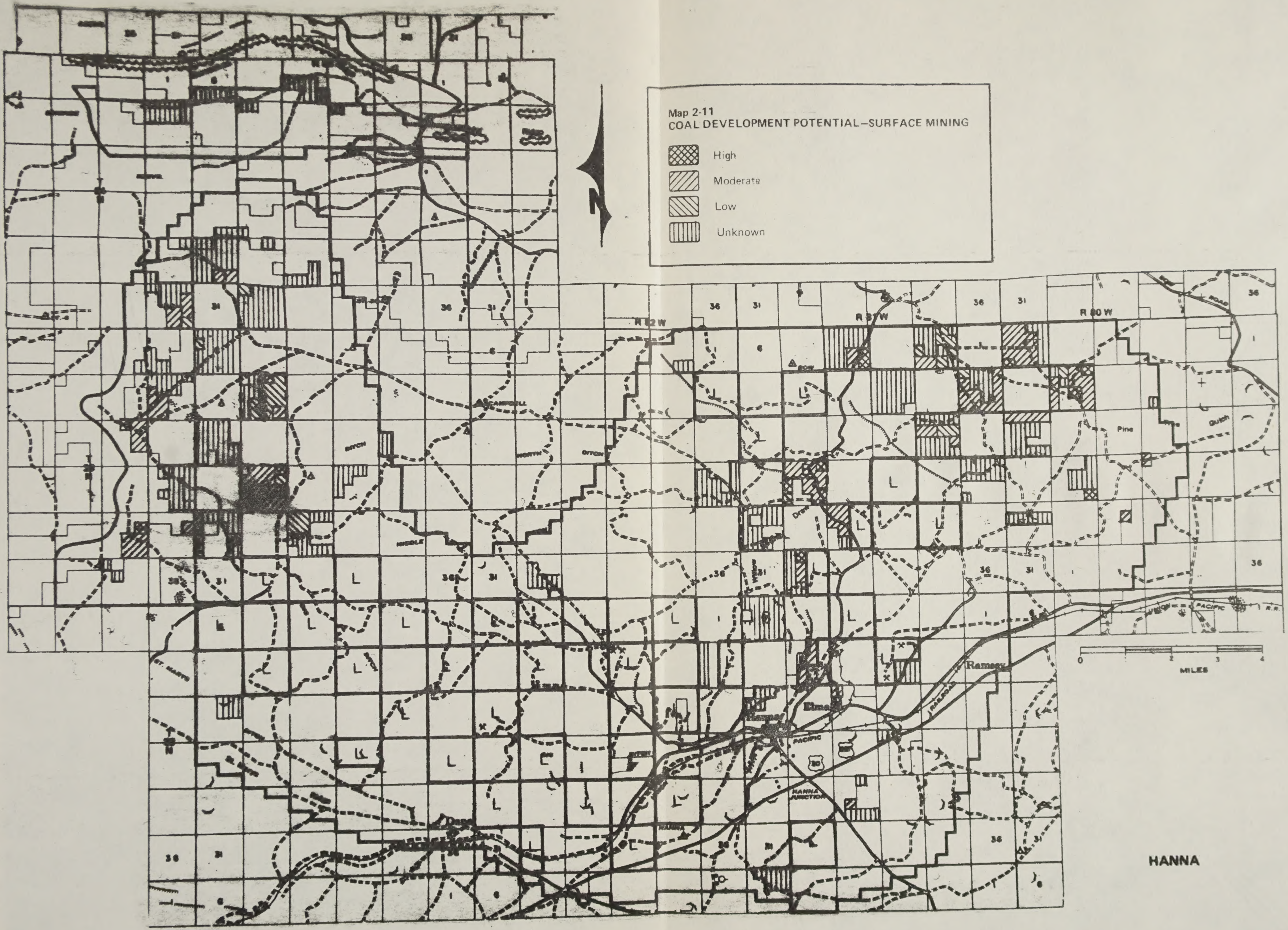
☐ Acceptable With No Likely Problems

HANNA
Hanna
Elma
Ramsey
Dana
HANNA JUNCTION
R 82 W
R 81 W
R 80 W
T 23 N
T 22 N
CAMPBELL
BOW
NORTH DITCH
Willow Springs Draw
Pine Gulch
St Marys Ridge
UNION PACIFIC R R
RAILROAD
Cottonwood
Ridge
30
287
0
2
3
4
MILES



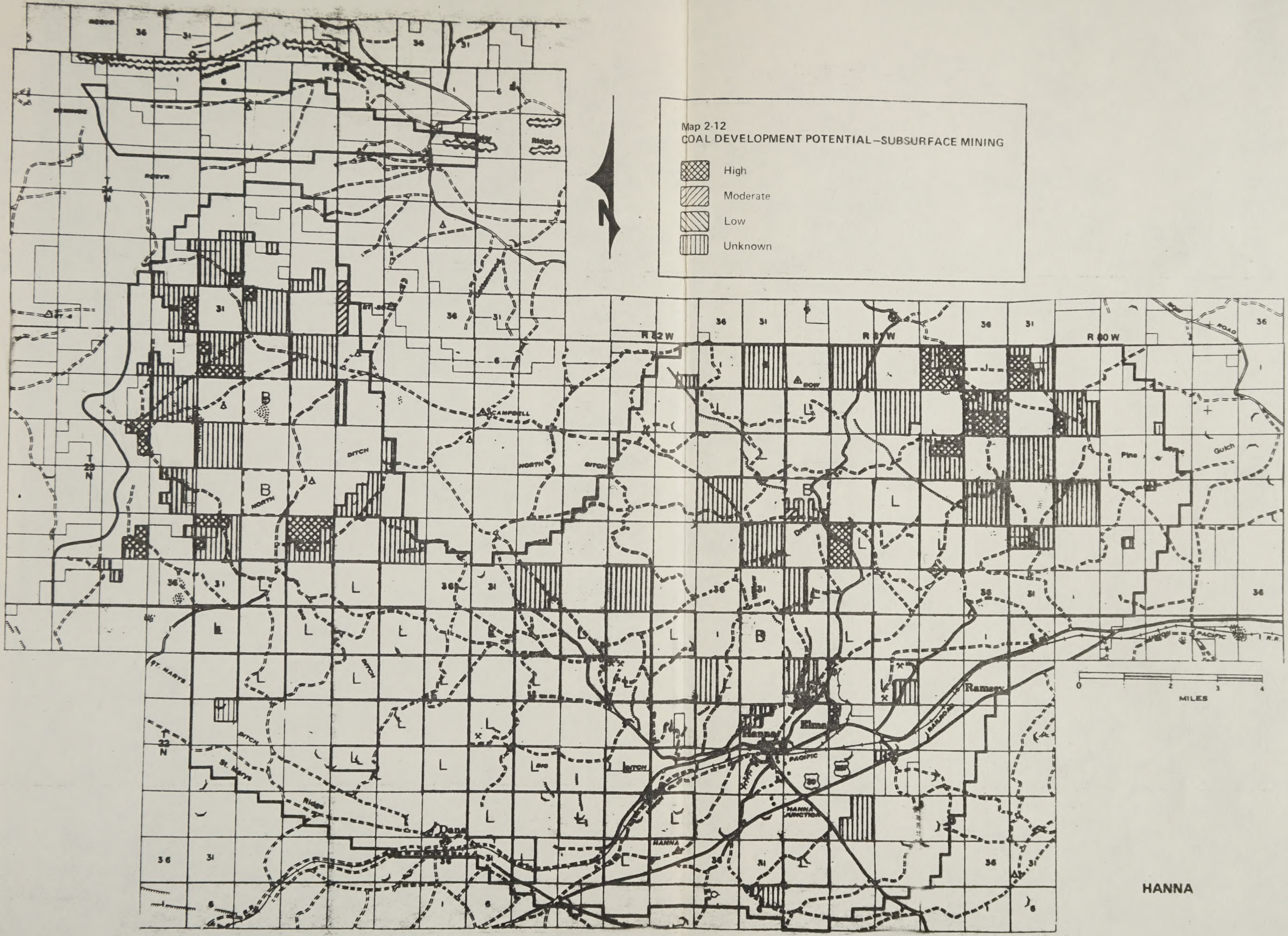
Map 2-10
UNSUITABILITY CRITERION NUMBER 23
(Alluvial Valley Floors)

▨ Unsuitable
▨ Acceptable Pending Study
☐ Acceptable With No Likely Problems
R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
CAMPBELL
Cottonwood
NORTH DITCH
MIDDLE
Willow
Spring
Draw
Pine
Gulch
St Marys
Ridge
Dana
Hanna
Elmo
Ramsey
HANNA JUNCTION
UNION PACIFIC R.R.
30
0 1 2 3 4
MILES
HANNA



Map 2-11
COAL DEVELOPMENT POTENTIAL—SURFACE MINING

▩ High
▨ Moderate
▧ Low
▥ Unknown
N
R 82 W
R 81 W
R 80 W
Pine
Gulch
Hanna
Elmo
Ramsey
Hanna Junction
Union Pacific R.R.
0 1 2 3 4
MILES
HANNA


R 82 W
R 81 W
R 80 W
T 24 N
T 23 N
T 22 N
36
31
1
6
B
L
NORTH
DITCH
CAMPBELL
BOW
Pine
Gulch
Ridge
ST. MARYS
St. Marys
Ridge
PACIFIC
R.R.
Ramsey
Elmo
Hanna
HANNA JUNCTION
Dana
30
0
1
2
3
4
MILES

Map 2-12
COAL DEVELOPMENT POTENTIAL—SUBSURFACE MINING

- ▦ High
- ▨ Moderate
- ▧ Low
- ▥ Unknown

HANNA

CHAPTER 3

INTRODUCTION

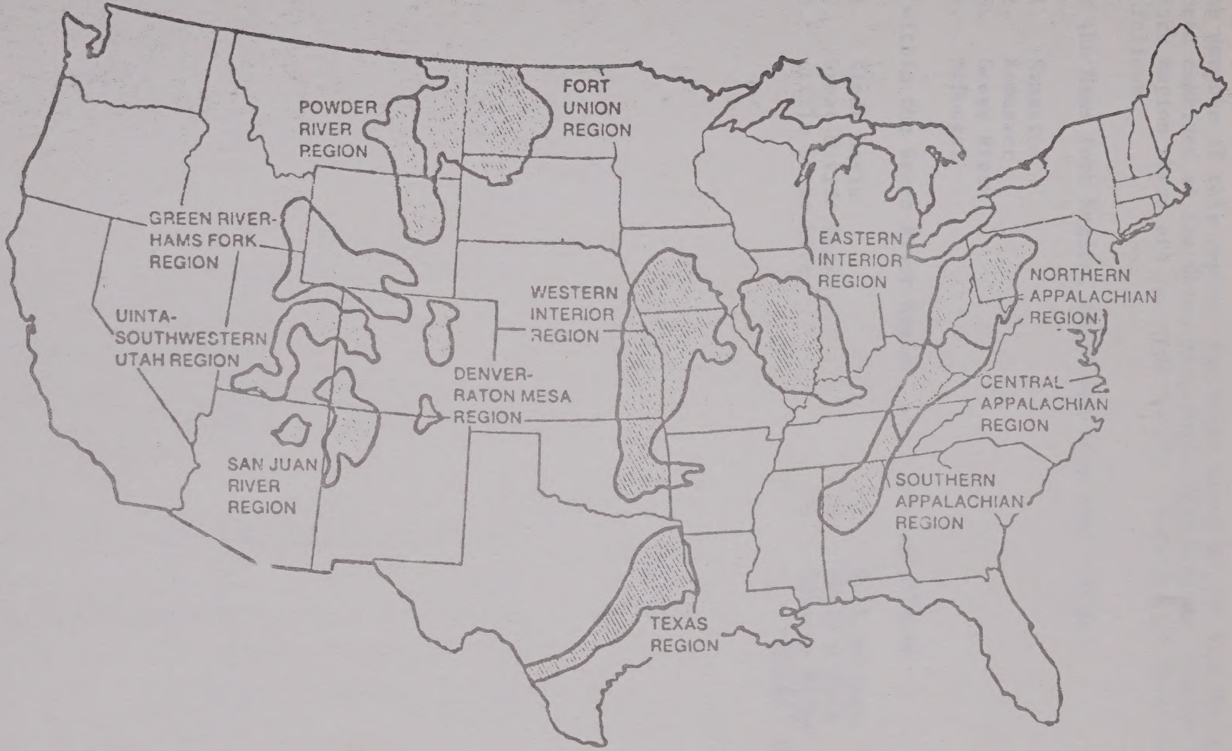
Fifty-four percent of the coal reserves in the United States are located west of the Mississippi River. In the past few years, production of western coal has increased rapidly, rising from 60 million tons in 1972 to 166 million tons in 1977 (24 percent of total 1977 coal production in the United States). This upward trend is expected to continue, as coal will make increasingly important contributions to the nation's energy supplies, especially for electric power generation, and as demand for coal increases in the western states.

Federally owned coal is concentrated in the six western coal producing states of Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming, which together, in 1977, accounted for 71 percent of the production of all western coal. Within these six western coal producing states, there are regions in which the coal is concentrated. These regions are as follows:

1. Fort Union Region covering western North Dakota, northwest South Dakota, and eastern Montana.
2. Powder River Region covering southcentral Montana and north-east Wyoming.
3. Green River/Hams Fork Region covering southwestern and south-central Wyoming, southeast Idaho, northeast Utah, northwest Colorado.
4. Uinta-Southwestern Utah Region covering eastcentral Utah, central Utah, southwest Utah, and central northwest Colorado.
5. San Juan River Region covering southwest Colorado, northwest New Mexico and northeast Arizona.
6. Denver-Raton Mesa Region covering southcentral Colorado, northcentral Colorado and northcentral New Mexico.

The above stated coal bearing Regions are depicted on Map 3-1. Production of federal coal in these states was 51.7 million tons in 1977, or 93.7 percent of their total coal production and 7.5 percent of national coal production. Of overall western coal reserves, approximately 60 percent is owned by the federal government and an additional 20 percent is dependent upon the availability of complementing federal coal for its production. (DES, Coal Programmatic, Dec. 78)

Wyoming's coal bearing areas are divided into 10 major regions, basins, or fields which underlie more than 90,000 square miles, or approximately 41 percent of the state, and which collectively contain about 24 percent of the nation's coal resources under less than 6,000 feet of overburden (See Map 3-2). These are as follows:


FORT UNION REGION
POWDER RIVER REGION
GREEN RIVER-HAMS FORK REGION
UINTA-SOUTHWESTERN UTAH REGION
WESTERN INTERIOR REGION
DENVER-RATON MESA REGION
SAN JUAN RIVER REGION
EASTERN INTERIOR REGION
NORTHERN APPALACHIAN REGION
CENTRAL APPALACHIAN REGION
SOUTHERN APPALACHIAN REGION
TEXAS REGION

MAP 3-1

TWELVE COAL SUPPLY REGIONS OF THE UNITED STATES

1. Powder River Coal Basin
2. Green River Coal Region
3. Hams Fork Coal Region
4. Hanna Coal Field
5. Wind River Coal Basin
6. Bighorn Coal Basin
7. Rock Creek Coal Field
8. Jackson Hole Coal Field
9. Black Hills Coal Region
10. Goshen Hole Coal Field

For the purpose of this report, the Green River Region and the Hams Fork Region have been combined as the Green River/Hams Fork Region. Within the Green River/Hams Fork Region there are ten coal fields. Location of these ten coal fields is as follows:

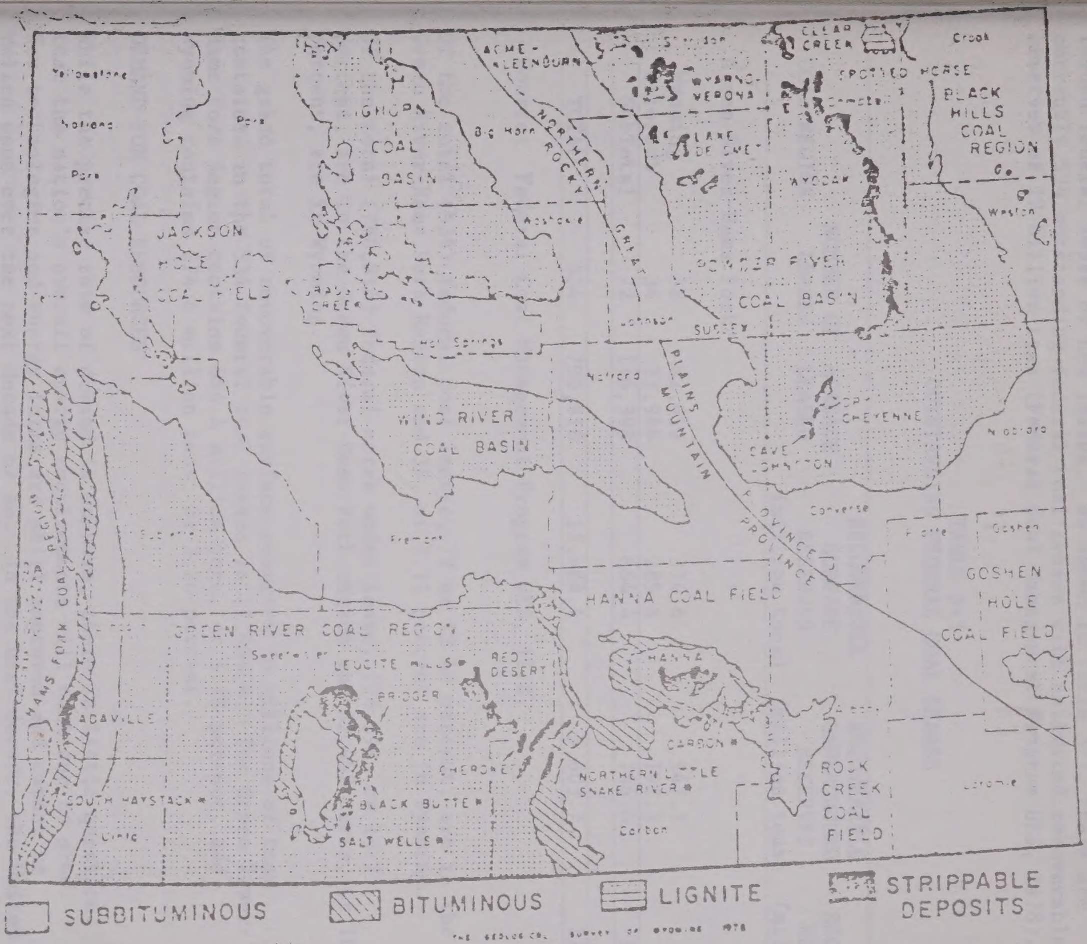
Within the Hams Fork Region, there are four coal fields:

1. Evanston
2. Kemmerer
3. Greys River
4. McDougal

While within the Green River Region, there are six fields:

1. Kindt Basin
2. Great Divide Basin
3. Little Snake River
4. Rock Springs
5. Henry's Fork
6. Labarge Ridge

(Glass, 1978)


Yellowstone
National
Park
Park
Park
JACKSON HOLE COAL FIELD
BIGHORN COAL BASIN
Big Horn
Washakie
GRASS CREEK
Hot Springs
ACME - ALEENBURN
NORTHERN ROCKY
CHIEF
Sheridan
CLEAR CREEK
WYARNO-VERONA
LAKE DE SMET
Crook
SPOTTED HORSE
Campbell
BLACK HILLS COAL REGION
WYODAK
Weston
POWDER RIVER COAL BASIN
Johnson
SUSSEX
Natrona
PLAINS MOUNTAIN PROVINCE
DRY CHEYENNE
DAVE JOHNSTON
Niobrara
Converse
Platte
Goshen
GOSHEN HOLE COAL FIELD
WIND RIVER COAL BASIN
Fremont
Sublette
HAMS FORK COAL REGION
GREEN RIVER COAL REGION
Sweetwater
LEUCITE HILLS
RED DESERT
BRIDGER
ADAVILLE
CHEROKEE
BLACK BUTTE
SALT WELLS
SOUTH HAYSTACK
Uinta
HANNA COAL FIELD
HANNA
CARBON
NORTHERN LITTLE SNAKE RIVER
Carbon
Albany
ROCK CREEK COAL FIELD
Laramie
SUBBITUMINOUS
BITUMINOUS
LIGNITE
STRIPPABLE DEPOSITS

* Preliminary: based on company data

THE GEOLOGICAL SURVEY OF WYOMING 1978

MAP 3-2 Wyoming Coal-Bearing Areas

GREEN RIVER-HAMS FORK REGION

POTENTIAL COAL RESOURCE INVOLVED

Future production of federal coal reserves can come from either already issued federal lease or new leases. As shown in Table 3-1, there are currently 534 outstanding federal coal leases with estimated recoverable reserves of 17 billion tons (Federal Coal Management Program DES, 1978).

TABLE 3-1
OUTSTANDING FEDERAL COAL LEASES

COAL REGION	NUMBER OF LEASES	ACREAGE LEASED	RECOVERABLE SURFACE RESERVES (million tons)	RECOVERABLE UNDERGROUND RESERVES (million tons)	TOTAL RECOVERABLE RESERVES (million tons)
Green River-Hams Fork:					
Wyoming	38	82,452	374.6	547.7	922.3
Colorado	34	33,946	289.8	198.3	488.1
SubTotal	72	116,398	664.4	746.0	1,410.4
TOTAL	534	790,816	11,484.4	5,603.7	17,088.1

Source: Federal Coal Management Program DES, 1978.

Of the total (534) federal coal leases, 72 or 13.48 percent, are in the Green River-Hams Fork Region and 38, or 7.11 percent are in Wyoming.

Of the total (790,816) federal acres under lease, 116,398, or 14.71 percent, are in the Green River-Hams Fork region and 82,452 acres, or 10.42 percent, are in Wyoming.

The grand total of recoverable surface reserves in millions of tons contained in the 534 federal coal leases is 11,484.4. The Green River-Hams Fork Region contains 664.4 million tons, or 5.78 percent, and Wyoming contains 274.6 million tons, or 3.26 percent.

DEMAND FOR COAL RESOURCES

While the precise rate of demand is unknown, there is little question that the nation's overall energy requirements will continue to grow. New technologies and energy forms are still unproven and cannot be relied upon over the next decade or so. In the next decade, the United States will be forced to address the problem of growing energy demands largely through a combination of three basic types of actions. These actions would be to--

1. expand use of coal as a domestic energy source,
2. obtain increased foreign supplies of oil and gas, and
3. curb demands by greater energy conservation measures.

Accordingly, the Department of the Interior (DOI) requested that the Department of Energy (DOE) provide a set of coal production projections. These projections for 1985 and 1990 were developed by the DOE Leasing Policy Development Office and were submitted in a report to the DOI in June 1978.

Table 3-2 shows the DOE national coal consumption projections for 1985 and 1990 by types of use.

TABLE 3-2
NATIONAL COAL CONSUMPTION
(million tons)

		1985			1990		
CONSUMING SECTOR	1977	LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
Electric Utility	475	692.4	759.5	816.1	772.4	1,007.1	1,276.7
Industrial	60	109.1	158.7	158.1	138.2	279.4	279.3
Metallurgical	77	96.1	96.2	96.2	100.0	100.0	100.1
Residential/Commerical	7	1.5	1.5	1.5	0.7	0.7	0.7
Synthetics	--	13.1	22.5	41.3	26.3	56.2	122.1
Exports	54	72.5	73.7	73.6	76.3	77.2	77.1
TOTAL	673	984.7	1,112.1	1,186.8	1,113.9	1,520.6	1,856.0

Source: Federal Coal Management Program DES, 1978.

Under assumptions of medium use, consumption of coal by utilities is projected to rise by 60 percent (from 475 to 760 million tons per year) between 1977 and 1985. The other main increase in coal consumption is in the industrial sector, where coal use is projected to grow by 98.7 million tons (from 60 million tons in 1977 to 159 million tons in 1985). Total coal consumption for 1985 is projected at 1.11 billion tons under medium level assumptions.

The medium level increase in national coal production projected between 1985 and 1990 is 37 percent. Most of this increase is due to greater use of coal by utilities. Industrial coal use has a more rapid rate of growth than utilities, but the increase is considerably less in absolute amount.

Table 3-3 shows DOE production projections for the western coal regions selected for assessment.

TABLE 3-3
DOE PRODUCTION PROJECTIONS FOR WESTERN COAL REGIONS
(million tons)

COAL REGION	1985 PROJECTION			1990 PROJECTION		
	LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
Western Interior	8.9	10.6	10.9	9.6	10.3	9.6
Fort Union	18.4	20.0	23.4	21.9	20.6	34.5
Powder River	140.4	204.6	232.1	173.7	396.1	602.9
Green River-Hams Fork	89.9	112.0	128.8	105.9	149.5	177.7
Uinta-Southwestern Utah	25.7	26.4	26.3	25.1	28.3	27.9
San Juan River	20.1	22.8	22.9	34.5	58.4	72.5
Denver Raton Mesa	5.3	5.3	5.2	5.4	6.8	6.6
Texas	57.7	57.7	57.7	62.3	79.6	104.1
TOTAL[1]	366.4	459.4	507.3	438.4	749.6	1,035.8

1. Excludes production from Arizona, Washington, and Alaska.

Note: The DOE estimates have been revised slightly for purposes of this table.

Source: Federal Coal Management Program DES, 1978.

By 1985, coal production west of the Mississippi River is projected to reach 42 percent of the national total (medium assumptions). By 1990, projected western production would reach 50 percent of the national total, corresponding roughly to the percentage of reserves located in the west.

The Northern Great Plains (Wyoming, Montana, and North Dakota, essentially) would become the largest single producing section of the country if DOE projections were realized. By 1990, Northern Great Plains coal production would exceed both Appalachain and Midwestern production and would constitute 36 percent of national production. Assuming medium consumption levels, production of 112 million tons per year in 1985 and 150 million tons per year in 1990 is projected for the Green River-Hams Fork Coal Region, or 24 and 20 percent, respectively, of total western production projected for these years.

The development of western coal has been stimulated by the greater ease with which low sulfur coal can meet air quality standards, creating a demand in the East for western coal. However, the most important sources of increased demand for western coal are in the West, itself. In Table 3-4, the DOE projected transportation of western-produced coal to eastern and western consumption regions is shown.

TABLE 3-4
EASTERN AND WESTERN CONSUMPTION OF WESTERN COAL
(million tons)

	1985			1990		
	LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
western coal consumed in the East	74.0	87.3	93.0	75.6	136.0	299.0
western coal consumed in the West	306.4	384.7	426.9	378.2	627.3	750.4
TOTAL WESTERN COAL	380.4	472.0	519.9	453.8	763.3	1,049.4

Source: Federal Coal Management Program DES, 1978.

Overall, for both 1985 and 1990 medium forecasts, 18 percent of western production is projected to be consumed in the East and Midwest. Under DOE's 1990 high assumptions, which involve low transportation costs, less strict sulfur scrubbing requirements, higher labor costs, and other assumptions designed to promote western production, 299 million tons per year of western coal would move to the East.

IMPACT OF THE UNSUITABLE DESIGNATION

The Green River-Hams Fork region is composed of two contiguous coal regions covering 37,500 square miles of extreme western Wyoming and northwestern Colorado, with small portions in Utah and Idaho. By using the conversion factor of 1 square mile equals 640 acres, 37,500 square miles equals 24,000,000 acres. This acreage figure does not reflect acreages underlain by workable coal deposits.

Table 3-5 shows the distribution of coal and surface ownership within the Green River-Hams Fork region.

TABLE 3-5
KRCRA COAL AND SURFACE OWNERSHIP
(acres)

REGION AND KRCRA	PUBLIC DOMAIN SURFACE FEDERAL COAL	PUBLIC DOMAIN SURFACE NONFEDERAL COAL	PRIVATE PRIVATE SURFACE FEDERAL COAL	PRIVATE PRIVATE SURFACE NONFEDERAL COAL
Green River-Hams Fork Region				
Wyoming KRCRAs				
Hanna-Carbon Basin	85,493	160	6,454	116,367
Kemmerer	105,260		18,053	125,751
Rawlins	49,863	40	16,155	48,761
Red Desert	453,267	640	7,834	309,076
Rock Springs	430,487	120	7,739	312,905
Total	1,124,370	960	56,235	912,860
Colorado KRCRAs				
McCallum	18,400	240	5,040	15,120
Yampa	36,970	3,640	269,300	101,675
Total	55,370	3,880	274,340	116,795
TOTAL GREEN RIVER-HAMS FORK REGION	1,179,740	4,840	330,575	1,029,655

The Green River-Hams Fork region contains 1,179,740 acres which are federal surface/federal coal which is 4.9 percent of the total 24,000,000 acres contained within the region. The federal surface/nonfederal coal contains 4,840 acres, or 0.02 percent of the total 24,000,000 acres contained within the region. There are 330,575 acres that are private surface/federal coal, or 1.37 percent of the total 24,000,000 acres within the region. The private surface/non-federal coal acres contain 1,029,655, or 4.29 percent of the total 24,000,000 acres contained within the region.

Impact of Designation on Supply of Coal

When dealing with coal, one must remember the term "resources" describes the estimated total amount of coal for which economic extraction could eventually become feasible. Whereas, the coal "reserve" is that limited portion of the resource which is judged to be minable at a profit under existing market conditions. The total identified coal resource of the United States is estimated to be 1.7 trillion tons. Of this coal, only 438 billion tons have thus far been identified with enough certainty and sufficient economically viable prospects to be included in the reserve category (Federal Coal Management Program DES, 197[illegible]).

The total estimated coal reserve base and 1976 production for the Green River-Hams Fork region are shown in Table 3-6.

TABLE 3-6
ESTIMATED COAL RESERVE BASE AND 1976 PRODUCTION-GREEN RIVER/HAMS FORK REGION

Reserve Base (million tons)			Production 1976 (thousand tons)		
deep	surface	total	deep	surface	total
13,396	2,147	15,543	768	24,916	25,684

Source: Federal Coal Management Program DES, 1978.

Of the total reserves in the West, the Green River-Hams Fork region contains 7 percent of the reserve base.

ESTIMATED VALUE ON SITE-SPECIFIC BASIS FOR HANNA BASIN

The Hanna Basin review area contains 156,750 acres of which 70,000 acres are federal. Of the total 70,000 federal acres, there are 46,830 acres that are unleased and 23,170 acres that are leased. There are 82,430 acres thar are privately owned, and 4,320 acres that are state owned.

Table 3-7 shows the breakdown of acreages within the Hanna Basin review area.

TABLE 3-7
SURFACE OWNERSHIP
HANNA BASIN KRCRA
(in acres)

BLM Administered				
Leased	Unleased	Private	State	Total
23,170	46,830	4,320	82,430	156,750

The unsuitability criteria were applied to the 46,830 unleased federal acres according to instructions from the Secretary.

Table 3-8 shows the breakdown of the acreages and tons of coal underlying these acres by unsuitability criteria.

TABLE 3-8
UNSUITABILITY DETEMINATIONS

Category	Acres	Tons of Coal*
Unsuitable acres by criteria	6,446	4,589,552
Acceptable pending study	23,024	16,393,088
Acceptable with inventory needs	17,360	12,360,320
Acceptable with no likely problems	-0-	-0-
TOTAL	46,830	33,342,960

*Assuming an average of 712.0 tons/acre derived from USGS CRO/CDP coal maps and considering only the high and moderate development potential coal that is strippable to 200 feet and coal beds that are greater than or equal to 5 feet in thickness.

Table 3-9 shows the breakdown of acres by unsuitability criteria after exceptions:

TABLE 3-9
HANNA BASIN REVIEW AREA

		Acceptable		
Criterion	Unsuitable	pending study	with inventory needs	with no likely problems
1	-0-	-0-	-0-	46,830
2	-0-	-0-	-0-	46,830
3	40	-0-	-0-	46,790
4	-0-	-0-	-0-	46,830
5	-0-	-0-	-0-	46,830
6	5	-0-	-0-	46,825
7	240	-0-	46,590	-0-
8	-0-	-0-	-0-	46,830
9	-0-	6,569	36,009	4,252
10	Criterion was not applied			
11	107	2,561	17,385	26,777
12	-0-	6,394	40,436	-0-
13	100	708	18,741	27,281
14	-0-	2,932	39,646	4,252
15	109	20,755	21,714	4,252
16	5,045	-0-	10,385	31,400
17	5,077	1,407	-0-	40,346
18	-0-	-0-	-0-	46,830
19	-0-	-0-	-0-	46,830
20	Criterion was not applied			
21	Criterion was not applied			
22	-0-	-0-	25	46,805
23	3,310	15,333	-0-	28,187
24	Criterion was not applied			

Note: The totals of the unsuitability criteria breakdown are not significant as individual criterion areas may have overlap with other criteria.

Table 3-10 shows the estimated revenue to be derived, total unsuitable acres to be affected, and the range of estimated market values of coal.

TABLE 3-10
HANNA BASIN REVIEW AREA

	Tons*	Acres	Estimated Values**		
			$16.00	$18.00	$20.00
Total Federal	33,342,960	46,830	$533,487,360.00	$600,173,280.00	$666,859,200.00
Total Unsuitable	4,589,552	6,446	$ 73,432,832.00	$ 82,611,936.00	$ 91,791,040.00

	Tons*	Acres	@ 12.5% Minimum Royalty***		
			$16.00	$18.00	$20.00
Total Federal	33,342,960	46,830	$66,685,920.00	$75,021,660.00	$83,357,400.00
Total Unsuitable	4,589,552	6,446	$ 9,179,104.00	$10,326,492.00	$11,473,880.10

*Estimated coal tonnages obtained from USGS CRO/CDP maps for high and moderate development potential coal that is strippable to 200 feet and coal beds that are greater than or equal to 5 feet in thickness and the average tons per acre to be 712 derived from 33,342,960 tons divided by 46,830 acres.

**Personal communication by W. Stiles with Mr. A.M. Hannum of Energy Development Corporation of Hanna, Wyoming, March 24, 1979.

***Assuming this is the minimum royalty rate to the federal government.

Table 3-11 shows the tonnage figures obtained from USGS CRO/CDP open file reports. These tonnage figures were used to obtain the average tons per acre figure used in calculating tonnages for each criterion.

TABLE 3-11
HANNA BASIN REVIEW AREA

	High Development Potential		Moderate Development Potential		Tons*
Seminoe Dam SE	530,000	+	210,000	=	740,000
TE Ranch	90,000	+	160,000	=	250,000
Pat's Bottom	5,020,000	+	2,350,000	=	7,370,000
Elmo	3,820,000	+	850,000	=	4,670,000
Como West	5,690,000	+	2,240,000	=	7,930,000
Hanna	140,000	+	-0-	=	140,000
Carbon	9,690,000	+	2,550,000	=	12,240,000
TOTAL	24,980,000	+	8,360,000	=	33,340,000

*33,342,960 Tons of High and Moderate Development Potential Coal
46,830 Federal Unleased Acres

$$\frac{33,342,960}{46,830} = 712 \text{ tons/acre average}$$

May 1, 1979

APPENDIX 1

PUBLIC COMMENTS

PUBLIC MEETING

COAL DEVELOPMENT -- HANNA BASIN and RED RIM -- CHINA BUTTE

RAWLINS DISTRICT

Introduction

Fred Wolf - Rawlins District Manager

Planning Process and Unsuitability Criteria

Jack Kelly - Chief, Division of Resources

Proposals for Hanna Basin Area

Floyd Ewing - Medicine Bow Area Manager

Proposals for Red Rim - China Butte Area

Ron Wenker - Divide Area Manager

Question and Answer Period

Public Statements

Introduction

Welcome to this public meeting on coal development planning. Since the spring of 1977, the Department of the Interior has been working to develop a new Federal Coal Management Program. This program development effort is now well along with a decision by the Secretary on the final form of the program scheduled for early June 1979.

The planning process which we will be reviewing tonight is an integral part of this developmental effort. The areas we are going to discuss include 100,000 acres of known coal resource lands located in Carbon County and the eastern edge of Sweetwater County. The areas specifically include 60,000 acres in the Hanna Basin and 40,000 acres in the Red Rim/China Butte area southwest of Rawlins.

Land use decisions defining coal development were previously developed for these federal lands in 1977. Since then, the Secretary of the Interior has developed interim criteria for determining lands as unsuitable for coal development. The proposed revisions included in the handout "Supplement to Wyoming Land Use Decisions", were developed through application of these criteria to the 1977 decisions.

In this public meeting Jack Kelly, our Chief of Resources, will explain the planning process under which we are reviewing coal planning decisions and the succeeding steps leading to selection of tracts for possible lease if the Secretary of the Interior decides to lease coal at a future date.

Next on the agenda, Floyd Ewing and Ron Wenker, the Area Managers for the Medicine Bow and Divide Resource Areas will present our proposed coal planning decisions for Hanna Basin and the Red Rim/China Butte areas. They will explain specifics as to why coal resource lands were declared unsuitable or acceptable for coal development. You may ask questions at any time during the presentations.

After all questions are answered we will take oral or written statements. You may comment on the unsuitability criteria, the application of the criteria, or the proposed decisions. Your comments can be submitted at this meeting or sent to us prior to March 26.

Considering your input, we will make final recommendations to the Director, BLM, regarding revision of our current land use decisions involving coal for these 100,000 acres.

We would like to emphasize the following points regarding this planning process:

a. The proposed land use decisions before you are based on the draft unsuitability criteria. These criteria are now under review by the Department to determine their final form.

b. One of the purposes of this effort is to test and evaluate the draft criteria. These test results will be used by the Department in formulating the final criteria.

c. The final MFP supplements, which will not be approved until after June 1, will be made consistent with final criteria as decided by the Secretary.

d. If requested by any person who may be adversely affected by the plan, a hearing will be held as required by the Coal Leasing Amendments Act and 43 CFR 3525.11(c) and (d), before the supplement is approved.

We welcome any questions or statements regarding the proposals which you have in hand and as explained here tonight.

Phil Espy, Blake Sheep Company

I would like to make a statement about the winter habitat on Red Rim (on Blake Ranch) I don't believe it. The antelope come towards town and they also go south on Red Rim. That can be the most severist places in that country, is what I'm trying to say. If its a good winter anything can winter anyplace, if its bad you can't get in there with a snow cat.

Response (Wenker)

Phil the area that we identified was the area that we feel is most critical area in the most severe storms. That doesn't mean they couldn't winter further towards Atlantic Rim, Rawlins, or scatter out.

Clark Bolser - Rocky Mountain Energy Company

Written Statement

John McPherson - Lawyer

I represent the land owner who owns the chekerboard area within what is designated as the Atlantic Rim - China Butte area, or at least a major portion of the deeded properties within that area. I do not have a especially prepared written statement, I would intend to submit that before the 26, but there are some comments that with your indulgence I would like to make this evening for the purposes of the record. We feel that the criteria fails to really address the unique situation presented by the checkerboard land pattern. Implementation of criteria as proposed and as applied in this particular situation in the case of the Red Rim - China Butte area fails to give proper consideration to the alternate federally owned private ownership found within that area. We feel that the criteria implementation

al criteria, as done in this instance, was primarily designed to deal ith large tracts of federally owned property, where federal minerals were volved, and was not really designed or addressed to the situation which we have here and that is of course the checkerboard ownership. The area ontains (according to Mr. Wenker) 230 million tons of economically recover-ble and marketable coal with high development potential. But I would ubmit to you gentlemen, that since his figures relate only to the federal ands, that instead of 230 million tons of coal we are really talking about 60 million tons of coal. Economically recoverable with high development otential. I say this to you because we are not talking just about what is ing to occur on the federal lands, 230 million tons, but I'm talking bout all of the lands out there, because without question what is done on he federal lands will have some effect on what is done on the private lands. Because of this unique land pattern, as I say it is readily apparent hat is done on the federal lands will have some effect as to what is done n the private lands. As a representative of Mr. Lawrence, I find myself and he finds himself in a very unique dilemma, he has historically used this property for a viable ranching operation. As the gentlemen in the local office know, he turns his steers out on the area, on which the potential coal development could take place, in the spring and then moves his cattle further south in the summer. If the area is closed to coal development on the federal section, its certainly possible the development of the coal resources could take place on the private sections. He is not the mineral owner of the private sections, that of course is owned by Rocky Mountain Energy. If this were to occur then certainly his ranch operations would be significantly affected. Having gone through that he then faces the possibility of a reexamine of criteria on the federal level which has to be admittedly possible in light of the change from the MFP findings and the present findings at which point and time they are going to go in and mine the federal minerals which again interrupts his ranch operations. We feel that because of the intermingling of private and federal lands that a joint effort between federal ownership and private surface ownership and private mineral ownership should be affected. A joint effort to assure (1) development of energy related resource; (2) protection of wildlife habitat and (3) proper reclamation. We heard what criteria were applied and why this particular area was not acceptable, air quality, reclamation, wildlife; I would submit to you that these are all issues addressed by the OSM, federal regulations, and by the Wyoming Department of Environmental Quality. Both of these entities have proven themselves more than capable and more than being well equipped to handle this type of a problem. Failure to affect a cooperative effort among all those involved will have really an adverse interest, it will result in a hopscotch type of development. We are concerned about reclamation, as a land owner we're properly concerned because that land to us is a viable ranching operation. And yet we also recognize that in this point and time in our society with energy- the demand of energy in America any decision not to develop such a viable natural resource should be carefully monitored. In listening here this evening, I get the feeling, and I come away with the impression, that one of the major reasons for classifying that area in the manner that it was classified was for the protection of wildlife, but let me submit to you gentlemen what could conceivably happen if joint effort is not affected, Mr. Lawerence could influence the deeded lands, if infact he fences the deeded lands, that would affect the wildlife unquestionably. And I would submit to you that the wildlife then being affected, you would have no other alternative but to come in and reapply your criteria to that situation. And I would submit to you that you would come away with a different result. Thats why I urge you and suggest to you that joint effort among these entities, that I suggested, should be effected. I would further submit that the time for comment and the time for input from the land owner has not been sufficient. I'm not saying that we were denied by the local office to come out and discuss this with you, but frankley we haven't had a opportunity to do that. Today is the first time that we've really been able to sit down and discuss and to make our feelings known and to find out some of the input from the BLM, so I would submit to you that the time implementation from the land owner is not sufficient. We own every other section out there and the decision that you make is going to very-very significantly affect our use of that land. I would also remind you that we hold the grazing leases on those sections, and yet we haven't been contacted nor has the situation been discussed with us until today. I would Submit too, that what should be done in this instance, if something must infact be done, that the area of Atlantic Rim and China Butte be classified as acceptable pending further study, with reference made to fish and wildlife, some type of an implementation of a plan with them, all of this data should be acquired before its categorically stated that this area is unsuitable. I would submit to you, and we feel that the material as proposed cannot be defended in court, and after all as I understand it, this is the directive under which the criteria was to be developed and implemented and certainly it's the ultimate test. Thank you very much.

Ed Zlolkowski - Energy Development Company

I am Vice President and General Manager of Energy Development Company of Hanna, Wyoming. Energy Development Company is a wholly owned subsidiary of Iowa Public Service Company of Sioux City, Iowa. We currently operate both deep and strip mines in the Hanna Basin. I appreciate this opportunity to comment on the proposed Management Framework Plan revision presented by the Bureau of Land Management.

Of particular interest to our company is the Overland unit consisting of the Red Rim and China Butte area. This area has been under study by Energy Development and our proposed joint venture partner, Rocky Mountain Energy, since early 1975. When the call for nominations was requested we submitted to the BLM, those lands which we wanted to have considered for leasing and we also submitted a preliminary mine plan which shows not only the broad surface mining area but also the reclamation plan. We have spent a large sum of money based on these nominations and been led to think that they could be expedited, the nominations and leases could be expedited. In fact, jointly we've spent over 3/4 of a million dollars, doing various studies such as wildlife, vegetation, hydrology studies, and so forth. This data was submitted to the Bureau of Land Management for their regional ES statement. We have also entered into a cooperative drilling program at the requirement of the United States Geological Survey, requesting participation in a drilling program, in which we and Rocky Mountain Energy again expended money to do some extensive drilling to complete a mine plan and reclamation study for this area. We are now told that because of the establishment of the 24 point "unsuitability criteria" this entire logical mining unit has been withdrawn from consideration by the secretary thus eliminating, by BLM figures, 230 million tons, or as eluded to by Mr.

MacPherson possible double that, or more. This is all surface minable coal. This is at a time when other federal agencies are pleading for energy independence. With an oil crisis again on the horizon all over world, this would seem to be counter productive, and a very poor time to be withdrawaing from consideration any proven minable energy resources.

We consider this criteria to be very vague, yet all encompassing. I dare say that by following the 24 point criteria, there is not an acre of federally owned ground anywhere in the U.S.-that by some stretch of the imagination-could not be classified as unsuitable for development.

Now let's look at some of these criteria's and how loosely they are written, and how much latitude is given to the individual making the determination.

First let's look at No. 5 "Scenic Areas". What are scenic areas to me, may not be at all scenic to someone else and vice versa. Yet someone is being put into a position of saying O.K. I call it scenic so you cannot mine a given area. This puts tremendous power in the hands of one man or one group with absolutely no recourse to the industry.

Second, let's take [illegible] 8, "Natural Areas". Now a natural area to me, would mean an area that has not been disturbed by man during the recorded history of mankind. The west is big, but I can not conceive that sometime in the last 5 to 6,000 years man has not crossed every square inch of this [illegible]. If he left traces of his presence, this would be of greater concern, and I would agree, but I prefer to live in the future - not in the past.

Lastly, lets look at criteria No. 13, the "Falcon Cliff Nesting Sites". The criteria says that these areas may be mined by leaving a quarter mile radius area around such sites. First of all, leaving such an area in a pit would create unbelievable operation problems and would cause the loss of the resource far outside the quarter mile radius, because of the slope of the overburden on all sides.

I think it is time the general public is made aware of such losses and what it is actually costing them every time they flip a light switch on, for the consumer is the one who is paying - not the falcon.

Take this case as an example. If we consider only the quarter mile radius, since the area would be greater or larger at greater depths, and consider a multiple seam situation which contains 20 feet of coal. This would mean that this one falcon, which I am certain could be temporarily displaced, is worth 4,000,000 tons of coal. If you care to carry this further, consider an average sales price of coal at $20.00 per ton, this means 80 million dollars on which all taxes are lost, employment is lost, and the price of electricity has risen, if indeed it is available.

This energy source is sorely needed to produce power for the farm and industrial areas of our nation. You may be sure that these areas would be diligently developed, for none of us can afford to tie up capital for land and machinery and not get a return on our investment as soon as possible.

We have been told that wildlife biologists from BLM and the Game & Fish commission agree that this area is very essential to the winter range, and I might agree if the entire area was active at any one time, but when one considers that the maximum of disturbed lands, or 200 acres, would be active in any given year it seems a small price to pay for badly needed fuel.

Thank you for your time and consideration.

Barbara Parsons - Citizen

The BLM seems to be taking a much more conservative approach than they did initially, this is very pleasing to me. Our national priorities on coal leasing are putting a great deal of pressure on BLM to release land for leasing. However, when many of our western values are being affected by mining, some of them irreversibily so, it seems prudent to be conservative. Time may provide alternative game management plans, better rehabilitation of land surface and other possible energy sources, but until that time it's refreashing to see a government agency showing responsive action to environmental concerns. Especially when faced by intense industrial pressure. Thank you gentlemen.

Teno Roncalio - U.S. Congressman (Retired)

I'm a retired Congressman and attorney and I speak in no one's interest but my own, this evening although I have friends who are in industry, and friends who are in environmental and friends who are land owners in this area. First I want to commend you, as the lady did just now, for your high degree of professionalism which we in Congress imposed upon you. We said to you, you do this as professionalists and biologists and give us some straight answers. That you have done, that we commend you for. What I think I have to say of some importance is this, and I say it as the author of what is sometimes called the Roncalio language on surface owner protection, as a man who fought to amend the endangered species act last fall, to make sure that if the contributions of the Grey Rocks Reservoir were impairing the life of Whooping Cranes then it should be permanently injoined, but that if it was not making any endangerment to the species of the Whooping Cranes then it should be permitted, that was my amendment. And I've done many other things, that you'll work with, over the years. I commend you for the work you're doing and I commend you for the expertise in this. I plead with you, from a level that looks at national and international problems, to see if we can't, with this problem, to come up with something that proves that the environmental world and industrial world can work hand in hand to solve delicate difficult problems. There is no question but what this is a critical antelope habitat. Is it the most critical habitat for following classification 15, I don't know. In 1949, there was a terrible imbarrassment in Wyoming by the result of the dead antelope along the northern strip of this, along the railroad tracks. Pictures appeared in national magazines, the state of Wyoming was severely critized by the Game and Fish Department for allowing these deaths of the pronghorns by the thousands, which happened that year because that was a horrible winter. So these things [illegible] know must not reoccur. Is it not possible, in this event, for you to state to your directors and the Secretary of Interior and to Mr. Craig, this area we believe can be managed for full protection of antelopes and allow some resource development because of its vital contribution to the well being of us all. This shall not be some new type of feed. With fencing with this protection, with stronger prohibition against firearms in a mining area, with this type of contribution can your work be made safe for those antelope and can the coal be mined. I'd like to think you can do that. If you [illegible] make those recommendations and allow the mining in an orderly way without damage to this particular herd, you'd be doing the world a favor and especially you'd be doing America a truly great favor because the most important function today is to prove to everybody in America that there can be sensible development of our resources and sensible protection of our environment and atmosphere hand in hand. I believe that

3/14/79	3/15/79	MONTE G. JORDAN	OFFICE OF COAL MGTMENT WASHINGTON, D.C.	PARTICIPATE IN PUBLIC MEETING ON MFP UPDATES
3/14/79		ANDREW L TARSHIS	WSO	"
3/14/79		Joel A. Strid	Carbon County Coal Co. Hanna, Wyo.	
3/14/79		Marion Loomis	Wyo Mining Assoc. Box 866, Cheyenne, Wy	
3/1!		Teno Roncalio	Self 3024 Capitol Ave Cheyenne, Wyo	U.S. Congressman Retired
3/1.'79		Joe Patti	WSO	PARTICIPATE IN UNSUITABILITY OPEN HOUSE / PUBLIC MTG.
3/14/79		CLARK BOLSER	ROCKY MTN ENERGY CO.	
3/14/79		James Medina	Rep U.S Sen Simpson 601 N Front Rock Springs	
3/14/79		Artie Sabelli	Carbon Co Council of Govts Box 1836 Rawlins, Wyo	obtain more information for dissemination to COG genl. membership
7.00 PM. 3/14/79		Robert Hettinger	Denver Federal Center MS 602 U.S. Geol Survey	Observer
3/14/79		C.E. Timmons	USGS DFC Denver	Observer.
3/14/79		Noel Buwens	USGS DFC Denver	Observer

Evening Session

VISITOR'S ROSTER

DATES ARRIVAL	DEPARTURE	NAME	OFFICE ADDRESS	PURPOSE
		Nancy Anderson	Coyote Canyon	
		[illegible] Anderson	Coyote Canyon Walcott Wyo	
		A J Weiss	Medicine Bow	
		CLARK BOLSER	ROCKY MTN ENERGY Co DENVER, COLO.	MAKE STATEMENT,
		Joe Spencer	411 Jefferson Rawlins, Wyo	
		Bob [illegible]	Savery Wyo	
		C Z [illegible]	3[illegible] First Bldg Billings Mont	
		Robert H. Berg	U.S. Fish & Wildlife Service, Cheyenne	listen
		M Taylor Lauren Jr	Casper Wyoming Half Circle Cattle Co	
		[illegible]	" "	
		N A Cappy	Blake Shoop	
		James Medina	U.S Sen. Simpson	

can be done, I hope you can come up with the same thing. Thank you very much.

Fred Wolf (District Manager)

Do we have any other statements? If not I would urge those of you who have not made an oral statement to submit your comments in writing to reach us by March 26, 1979. If we have no further statements this public meeting is closed.

Evening Session

VISITOR'S ROSTER

DATES ARRIVAL	NAME	OFFICE ADDRESS	PURPOSE
3/14/79	[illegible] Sandberg	USGS; MS 602 DFC Denver	Observer
3/14/79	John [illegible]	BLM Rawlins District	
3/14/79	Bruce Waddell	BLM Rawlins District	
3/14-79	Tom Howard	Rawlins Daily Times	
3/14/79	John A MacPherson	Box 999 Rawlins	
3/14/79	Barbara W Parsons	319 W. Larsen Rawlins	
3/14/79	Bill Iverson	Carbon Co Planning Rawlins	
3/14/79	Ed Ziolkowski	Box 600, Energy Dev. Co. Hanna Wyo. 82327	
3/14/79	Arnold Hannum	Energy Development Box 600 Hanna	
3/14/79	NORMAN PALM	ELK MTN. WYO.	
3/14/79	George McDonald	1822 Mac [illegible] Rawlins, Wyo	
3/14/79	James McDonald	" "	

VISITOR'S ROSTER

NAME	OFFICE ADDRESS	PURPOSE
Greg Hiatt	Wyo Game & Fish	
Ray Boyd	BLM	
Bob Dossen	BLM	
Wm Murray	1123 1/2 Alder St. Rawlins	
Harry Ochoa	Box 66 Medicine Bow	
Robert Vivian	Rawlins Wy	

USDI-BLM Form 1100-1 (June 1971)

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RAWLINS DISTRICT

WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

ED HERSCHLER
GOVERNOR

March 21, 1979

Mr. Fred Wolf
District Manager
Bureau of Land Management
Rawlins District
P. O. Box 670
Rawlins, WY 82301

Dear Mr. Wolf:

Thank you for the opportunity to review the supplements to the Hanna and Overland Management Framework Plans. The supplements, which apply the twenty-four coal unsuitability criteria, are a major step in the emerging federal coal management program. As you may know, the state would play a major role in the Secretary's preferred alternative program, and I have accordingly taken a personal interest in its implementation.

My review of the two supplements raises at least three serious questions.

First, the supplements convey no sense of either the quality or range of the data used to apply the unsuitability criteria. I have consistently questioned Interior's ability to apply adequate resources to the tasks created by the proposed program, and I do not find my doubts relieved by supplements in hand. They are inscrutable when it comes to determining the level of Interior's effort. This is precisely what concerned me for many months; and I believe that the situation must be rectified before it becomes a source of contention in the months ahead.

Second, although there are references in the supplements to unsuitability criteria which involve the state (criteria 15 and 23), I have no idea how you have secured the state's position in reaching your conclusions. You certainly have not consulted with me. It is my understanding that the new program's procedures for tract ranking and selection will directly involve a representative of my choosing. It seems only sensible that I should also be consulted on the application of unsuitability criteria.

Third, I understand that since I received the supplements

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you have received clarification from Washington regarding the application of the unsuitability criteria. One instance of particular interest is the protection of wildlife populations, which need not be protected totally, but only in part. This opens the question of mitigation measures, or at least coal development in parts of areas which would be wholly excluded if the criterion were applied strictly. Since this Washington directive apparently alters the ground rules that were in force when you first prepared the supplements, I am interested in learning what changes in the supplements, if any, you will make.

Without the answers to these three questions, it is difficult, if not impossible, to effectively review the supplements. Your comment deadline of March 26, therefore, seems premature, and I think it would be appropriate to extend the deadline pending a detailed response from you.

Yours sincerely,

EdHerschler

EH/amt

cc: Mr. Guy Martin, Assistant Secretary for Land and Water, USDI
Mr. Daniel Baker, State Director, BLM
Mr. John Watson, WIEB

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

Water Quality Division

HATHAWAY BUILDING CHEYENNE, WYOMING 82002 TELEPHONE 307 777-7781

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RAWLINS DISTRICT

MEMORANDUM

To: Robert E. Sundin, Director
Department of Environmental Quality

From: Frank R. Harman
Frank R. Harman, Environmental Engineer
Water Quality Division

Date: March 19, 1979

Subject: Proposed supplement to Wyoming Land Use Decisions for determination of unsuitability for coal development in the Hanna and Overland areas, Rawlins District, State of Wyoming

The above mentioned documents cover revisions to the coal development plans in the Red Rim-China Buttes and Hanna Basin areas in the Rawlins District of the State of Wyoming.

Area descriptions and classifications are dealt with. The unsuitable and acceptable areas are demarcated for the development of coal.

No environmental impact study is included in either of the studies and the general nature of the study does not warrant any comments from the Water Quality Division at this time.

FRH/nc

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

OFFICE OF THE WYOMING STATE ARCHEOLOGIST

DEPARTMENT OF ANTHROPOLOGY
LARAMIE, WYOMING 82071

UNIVERSITY OF WYOMING
TELEPHONE: 766-6334

JAN L. WILSON
Acting Director
777-7695

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JACK D. OSMOND
P.O. Box 216
Thayne 83127
ALBERT PILCH
1800 Morse Lee
Evanston 82930

March 8, 1979

There is not enough known about archeological resources in these areas to make this kind of decision.

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March 5, 1979

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BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

Mr. Richard Hartman
State Planning Coordinator
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Dear Mr. Hartman:

The Historical Section of the Wyoming State Historic Preservation Office has received your memorandum of February 28, 1979, and accompanying "Hanna and Overland Management Framework Plan Supplements" (79-112P).

Our staff appreciates the opportunity to comment upon this management plan regarding potential impact upon cultural resources. After reviewing our inventories and other pertinent historical sources, I find no sites either enrolled in or eligible for inclusion in the National Register of Historic Places within those areas designated for leasing subject to environmental statement. However, since these supplements are only general management plans, our staff will await future site specific statements before recommending cultural clearance.

Again, thank you for the opportunity to comment. I am pleased to the see that the Bureau of Land Management by including "Historic Lands and Sites" within its Unsuitability Criteria acknowledges the importance of identifying and saving Wyoming's cultural resources.

Cordially,

Jan L. Wilson

Jan L. Wilson, Director and
State Historic Preservation Officer

by: Greg Kendrick
Review and Compliance Officer

JLW:GDK:klm

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DEPUTY DIRECTOR AND
STAFF GEOLOGIST
GARY B. GLASS
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MAR 7 1979

March 5, 1979

RECEIVED
MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

Mr. Steve Freudenthal
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

Dear Mr. Freudenthal:

Mr. Gary B. Glass, Deputy Director/Coal Specialist has reviewed the Hanna and Overland Management Framework Plan Supplements (I.D. No. 79-112P). He has made several comments, which are attached. These are the only comments we have to make at this time.

If your office or another agency would like us to reexamine any part of this report for any specific purpose, please don't hesitate to ask.

Sincerely,

Rodney H. De Bruin

Rodney H. De Bruin
Staff Geologist

RHD:mm
Enclosures: 2

DANIEL N. MILLER, JR.
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RECEIVED
MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

TO: Rodney De Bruin, Environmental Geologist

FROM: Gary B. Glass, Deputy Director/Coal Specialist

DATE: March 2, 1979

SUBJECT: COMMENTS ON PROPOSED LAND USE DECISIONS FOR THE OVERLAND AND HANNA AREAS OF WYOMING

OVERLAND AREA

In this area, the Bureau of Land Management has designated all or portions of two State coal leases (640 acre tracts) unsuitable or unacceptable for surface mining. In addition, because lands adjacent to four other State coal leases are also designated as unsuitable and unacceptable, the possibility of mining those State leases is seriously impaired as well. See enclosure on which state leases are colored blue.

HANNA AREA

The 2000 feet wide buffer zone around Seminoe Reservoir excludes a sizable tonnage of minable coal. If there is any likelihood that Seminoe Dam will be expanded, and there evidently have been plans to do that, the coal that BLM is now excluding will be lost forever. Any change in land configuration caused by mining at this time might well be hidden by future inundation anyway.

I also seriously question what effect active mining will have on the recreational activities at the reservoir. I don't think mining will deter fishermen. Obviously, steps to prevent fugitive dust and runoff are adequately mitigated before any mining permit is approved anyway.

RECEIVED
MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

One final observation, the riparian habitats along the present shoreline, which is a concern of BLM, will be more permanently damaged by enlarging the reservoir than any temporary damages caused by mining. Will BLM also oppose enlargement of this reservoir on similar grounds?

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APR 2 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

ED HERSCHLER
GOVERNOR

March 29, 1979

Mr. Fred Wolf
District Manager
Bureau of Land Management
Rawlins District
P.O. Box 670
Rawlins, WY 82301

Re: Hanna and Overland Management Framework Plan

Dear Mr. Wolf:

This is to advise that the State Planning Coordinator's Office, pursuant to the Wyoming Environmental Statement review procedure, has completed the review of the above referenced environmental report. The attached state agency comments are for your information and inclusion into your environmental statement efforts.

Thank you for the opportunity to review the report. Please notify this office of the progress of this project.

Sincerely,

State Planning Coordinator's Office

CO:mee

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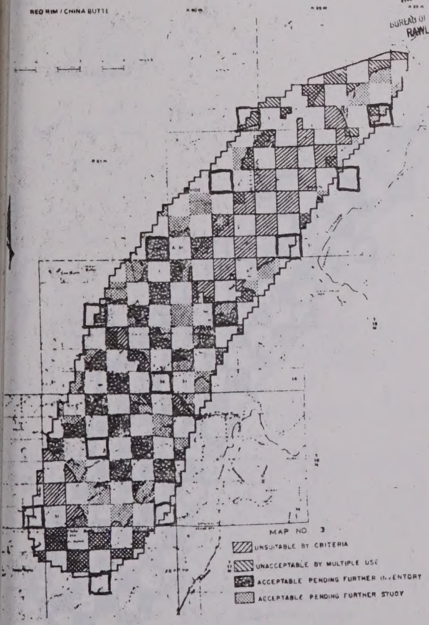
MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT


RED RIM / CHINA BUTTE
MAP NO 3
▨ UNSUITABLE BY CRITERIA
▧ UNACCEPTABLE BY MULTIPLE USE
▩ ACCEPTABLE PENDING FURTHER INVENTORY
░ ACCEPTABLE PENDING FURTHER STUDY

☐ state coal leases

DANIEL N. MILLER, JR
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Rodney De Bruin, March 2, 1979 Page 2

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MAR 7 1979

March 5, 1979

Mr. Steve Freudenthal
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

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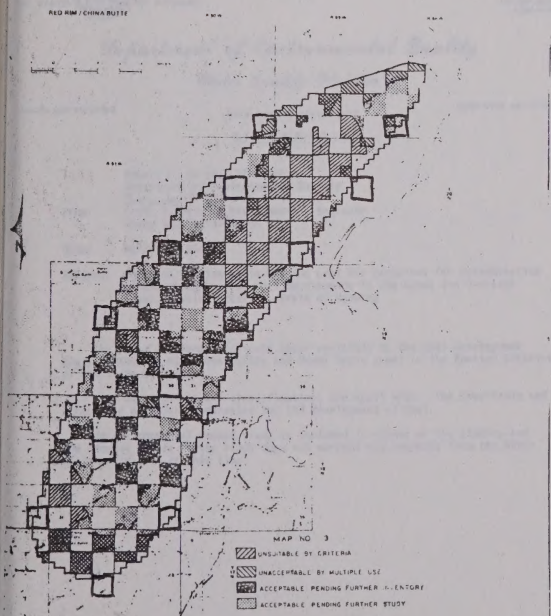
Staff Geologist

RHD:mm
Enclosures: 2

Geology--Interpreting the past to provide for the future


RED RIM / CHINA BUTTE
UNSUITABLE BY CRITERIA
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ACCEPTABLE PENDING FURTHER INVENTORY
ACCEPTABLE PENDING FURTHER STUDY

MAP NO. 3

☐ state coal leases

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

604 EAST 25TH STREET CHEYENNE, WYOMING 82002

JAN L. WILSON
Director
777 7695

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JACK D. OSMOND
P.O. Box 216
Thayne 83127
ALBERT PILCH
1800 Morse Lee
Evanston 82930

March 5, 1979

Mr. Richard Hartman
State Planning Coordinator
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Dear Mr. Hartman:

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Cordially,

Jan L. Wilson

Jan L. Wilson, Director and
State Historic Preservation Officer

by: Greg Kendrick
Review and Compliance Officer

JLW:GDK:klm

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

OFFICE OF THE WYOMING STATE ARCHEOLOGIST

DEPARTMENT OF ANTHROPOLOGY
LARAMIE, WYOMING 82071

UNIVERSITY OF WYOMING
TELEPHONE: 766-6334

JAN L. WILSON
Acting Director
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1607 West Spruce
Rawlins 82301
JACK D. OSMOND
P.O. Box 216
Thayne 83127
ALBERT PILCH
1600 Morse Lee
Evanston 82930

March 8, 1979

There is not enough known about archeological resources in these areas to make this kind of decision.

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

Water Quality Division

HATHAWAY BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

MEMORANDUM

To: Robert E. Sundin, Director
Department of Environmental Quality

Frank R. Harman

From: Frank R. Harman, Environmental Engineer
Water Quality Division

Date: March 19, 1979

Subject: Proposed supplement to Wyoming Land Use Decisions for determination of unsuitability for coal development in the Hanna and Overland areas, Rawlins District, State of Wyoming

The above mentioned documents cover revisions to the coal development plans in the Red Rim-China Buttes and Hanna Basin areas in the Rawlins District of the State of Wyoming.

Area descriptions and classifications are dealt with. The unsuitable and acceptable areas are demarcated for the development of coal.

No environmental impact study is included in either of the studies and the general nature of the study does not warrant any comments from the Water Quality Division at this time.

FRH/nc

THE STATE OF WYOMING

ED HERSCHI
GOVERNOR

State Conservation Commission

2219 CAREY AVENUE
PHONE (307) 777-7321
CHEYENNE, WYOMING 82002

WAYNE A. EDGERTON
CONSERVATION COMMISSION STATE EXECUTIVE
TIMOTHY J. KAUTZA
DISTRICT PROGRAM CONSULTANT
DWIGHT KIMSEY
208 WATER QUALITY COORDINATOR

COMMISSION MEMBERS:
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GEORGE CHRISTOPULOS (STATE ENGINEER'S OF
EUGENE HARDY (LIVESTOCK BOARD)
JOHN NILAND (D.E.P.A.D.)

March 9, 1979

MEMORANDUM

TO: Don Daiss, Assistant Commissioner of Agriculture

FROM: Timothy J. Kautza, District Program Consultant
State Conservation Commission Tim Kautza

SUBJECT: HANNA AND OVERLAND MANAGEMENT FRAMEWORK
PLAN SUPPLEMENTS - BUREAU OF LAND MANAGEMENT

I have reviewed the above named subject and offer the following comments for your consideration.

What agencies, organizations, and individuals participated in the development of the supplements? Hopefully, cooperation was sought from others by the Bureau of Land Management when preparing this report. If not, I suggest that this practice be followed in the future.

Who has identified the Muddy Creek, Fillmore Creek and Separation Creek as alluvial valley floors?

Who determines if an area of land is unreclaimable?

Who determines if an area meets the criteria for prime farmland?

I recommend that the Rawlins District of the Bureau of Land Management send a copy of this Management Framework Plan Supplement to the Big Sandy Conservation District, Box 46, Farson 82932; the Little Snake River Conservation District, c/o Lee Airheart, Baggs 82321; the Saratoga-Encampment-Rawlins Conservation District, c/o Dick Barkhurst, Saratoga 82331; the Laramie Rivers Conservation District, c/o Jim May, Rex Route, Box 90, Laramie 82070; and, the Medicine Bow Conservation District, c/o Fred Cronberg, Medicine Bow 82329, and inform each of the open house and public meeting March 14, 1979. I believe these Conservation Districts are interested parties and could offer valuable information to help BLM properly designate lands unsuitable for coal development.

TJK:mn

PROTECT OUR HERITAGE
through the
Conservation of Wyoming's Natural Resources

THE STATE OF WYOMING

ED HERSCH
GOVERNOR

Wyoming Department of Agriculture

TELEPHONE: (307) 777-7321
CHEYENNE, WYOMING 82002

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ED HERSCHLER GOVERNOR
DR. HAROLD TUMA DEAN
COLLEGE OF AGRICULTURE
UNIVERSITY OF WYOMING LAR

MEMORANDUM

DATE: March 23, 1979

TO: State Planning Coordinator
Wyoming State Clearinghouse

FROM: Don Daiss, Assistant Commissioner Don Daiss
and Liaison Officer for E.I.S. Review

SUBJECT: Hanna and Overland Management Framework Plan Supplements
State Identifier Number 79-112P

Attached are the comments of Tim Kautza, District Program Consultant, Wyoming Conservation Commission.

Thank you for the opportunity to comment.

DDjh

Messenger

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

LAND QUALITY DIVISION

STATE OFFICE BUILDING
TELEPHONE 307-777-7756
CHEYENNE, WYOMING 82002

March 29, 1979

3/30/79
JLE 3/30
Load Resp. /

Mr. Daniel P. Baker
State Director
Bureau of Land Management
State Office
P.O. Box 1828
Cheyenne, WY 82001

RE: 3500 (933) 1608

Dear Dan:

Your letter of March 8, 1979 to Bob Sundin concerning the preliminary application of the alluvial valley floor unsuitability criteria to two areas in the Rawlins district was forwarded to myself for review and response. The staff has evaluated the supplied text concerning criteria and the maps for the Hanna Basin Area and the Red Rim - China Buttes Area. As a result of this review I provide the following response to your preliminary application of the alluvial valley floor criteria as related to the provisions of P.L. 95-87.

Within the background documents where you describe your evaluation procedures for the application of the criteria to various drainages reveals that your preliminary evaluation of the unsuitability criteria in actuality involves the identification of areas which may be alluvial valley floors. In this respect the standards that you have chosen for identifying alluvial valley floors are not totally correct for making an affirmative type declaration of the presence of an alluvial valley floor.

In accordance with the definition of an alluvial valley floor, as provided in P.L. 95-87, a stream must be boardered by unconsolidated stream laid deposits which will lend themselves to subirrigation and flood irrigation agricultural activities. This implies that there must exist intensive agricultural activities (mechanically harvested crops or improved pasture) or the relief and soils are condusive to intensive agricultural activities.

In accordance with Section 510(b)(5), affirmative declaration of the presence of an alluvial valley floor does not necessarily imply that the alluvial valley floor is prohibited from mining. Under the section of your evaluation entitled "Suitability" you appear to be implying that the simple identification of an alluvial valley floor prohibits an area from being mined. This is an incorrect

assumption. If the alluvial valley floor is "undeveloped rangeland" or if the land has been developed, implying it has been cropped or hayed, but the acreage is so small that it contributes very little to a farm's total production, such lands could be mined. In Southcentral Wyoming many drainage areas which may be declared alluvial valley floors will be undeveloped rangeland throughout most of the reach of the stream. Additionally, an area maybe unsuitable for mining if the mining operation located adjacent to an alluvial valley floor would create a "material damage" to those waters which supply the alluvial valley floors. This second prohibitive provision does not appear to have been considered in your criteria.

I have taken the liberty to attach the Division's Guideline No. 9. I suggest your review those sections concerning Identification, Importance to Farming and Material Damage. I would suggest that you review this enclosed document for I am uspicious of the criteria and conclusions you have reached. If there are questions concerning this response you should direct your questions to Gary Beach of this office.

Sincerely,

W. C. Ackerman

Walter C. Ackerman
Administrator

GB:WCA:dlw

Guideline No. 9
Wyoming Department of Environmental Quality
Land Quality Division

Alluvial Valley Floors

This document is a guideline only. Its contents are not to be interpreted by applicants, operators, or DEQ staff as mandatory. Its preparation is the result of numerous requests from coal applicants and operators, who have expressed a need for guidance to assist them in preparation of a comprehensive initial application containing all required information.

The guideline follows the following format:

Part I - Definitions Concerning Alluvial Valley Floors.

Part II - Identification of an Alluvial Valley Floor.

Part III - Identification of the Extent of an Alluvial Valley Floor.

Part IV - Importance of Alluvial Valley Floors to Farming.

Part V - Evaluation of Material Damage.

Part VI - Evaluation of Essential Hydrologic Functions.

Part VII - Monitoring During Mining and Reclamation.

A reference for more information on alluvial valley floors is the draft of, "Technical Identification and Study of Alluvial Valley Floors, Guideline," by Jack Schmidt, published by the Office of Surface Mining, Denver, Colorado, August 15, 1978.

I. DEFINITIONS FOR PURPOSES OF THIS GUIDELINE

1. "Adjacent area" Those areas of natural and human resources contiguous to or near the affected land which may be impacted by surface coal mining and reclamation operations conducted within a permit area during the life of a mine. (Proposed Rules and Regulations, OSM).

2. "Affected alluvial valley floor" For purposes of Part IV, those portions of an alluvial valley floor where use of the land for farming will be interrupted, discontinued or precluded by mine disturbance and/or where the essential hydrologic functions cannot be preserved during the mining operations.

3. "Affected land" The area of land from which overburden is removed, or upon which overburden, development waste rock or refuse is deposited, or both, access roads, haul roads, mineral stockpiles, mill tailings, impoundment basins, and all other lands whose natural state has been or will be disturbed as a result of the operation. (Wyoming Environmental Quality Act).

(I. Continued)

4. "Agricultural activities" The process of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation of these products for man's use.

5. "Alluvial saturated zone" A thoroughly wet area or areas within unconsolidated stream laid deposits that may or may not be in communication with aquifers outside of these deposits.

6. "Alluvial valley floors" The unconsolidated stream laid deposits holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities but does not include upland areas which are generally overlain by a thin veneer of colluvial deposits composed chiefly of debris from sheet erosion deposits by unconcentrated runoff or slope wash, together with talus, other mass movement accumulation and windblown deposits. (Wyoming Environmental Quality Act).

7. "Animal unit (AU)" The amount of feed required to maintain an average sized cow (1,000 lbs.) for one year. An Animal Unit Month (AUM) is the amount of feed required to maintain an average sized cow for one month.

8. "Aquifer" A zone, stratum or group of strata that can store and transmit water in sufficient quantities for a specific use. (Land Quality Division Rules and Regulations).

9. "Capillary zone" Moist soil in direct communication with the water table by capillary action. This distance may be generally assumed to be 3 feet above the water table when field testing is not practical.

10. "Diversion" A channel, embankment, or other manmade structure constructed for the purpose of diverting water from one area to another. (Land Quality Division Rules and Regulations).

11. "Essential hydrologic functions" The role of the valley floor in collecting, storing, and regulating the natural flow of surface water and groundwater, and in providing a place for irrigated and subirrigated farming, by reason of its position in the landscape and characteristics of its underlying materials. (Land Quality Division Rules and Regulations).

12. "Farming" The practice of agricultural activities.

13. "Flood irrigation" Irrigation through natural overflow or the temporary diversion of high flows in which the entire surface of the soil is covered by a sheet of water. This definition includes:

(I. Continued)

a. Natural irrigation upon a strip of relatively horizontal land bordering a stream which is overtopped by the agriculturally useful flood, that is, a flood with a 2 or 3 year recurrence interval.

b. Artificial irrigation with a reasonable diversion that transports natural streamflow by gravity.

14. "Material damage" Changes in the quality and quantity of surface water and groundwater supplied to alluvial valley floors that would significantly reduce the productivity of flood irrigation and/or subirrigation agricultural activities on the alluvial valley floor.

15. "Subirrigation" The supplying of water to plants from below or the existence of a capillary zone or saturated subsurface where water is available for use by vegetation.

16. "Undeveloped rangeland" Open areas used for grazing having no structures for controlling the grazing disturbance of livestock.

17. "Unconsolidated stream laid deposits" Earthen materials transported and precipitated within a body of water flowing downslope along a definite path.

II. IDENTIFICATION CRITERIA

A. Introduction

The items below require analysis to make a positive identification of an alluvial valley floor. For certain site specific conditions, a negative declaration may be made by proving the absence of some of these items.

1. A stream is underlain by unconsolidated stream laid deposits.

2. Subirrigation or flood irrigation naturally occurs.

3. Flood irrigation may be or presently is practiced on the site.

4. Water quantity and quality is sufficient for flood irrigation or subirrigation agricultural activities.

Procedures in Sections B, C, and D are suggested to aid in identifying the items above. Procedures labeled with a single asterisk (*) do not require special equipment and may be used as a preliminary identification procedure.

B. Identification of Unconsolidated Stream Laid Deposits

Most streams will be underlain by these deposits. Positive identification is obtained by observing:

(II. Continued)

*a. Point bars, splays, abandoned meanders, flood plains, or terraces at the site, or;

*b. Bedload or washload sediments deposited or transported in a nonbedrock channel bottom.

C. Identification of Flood Irrigation and Subirrigation.

1. Subirrigation identification.

Three criteria are recommended for positive identification of subirrigation.

*a. Identification of significant amounts of subirrigated indicator plant species.

b. Identification of an alluvial saturated zone.

c. Identification of abundant roots of agriculturally useful plants extending;

(1) into the capillary zone or the water table, or;

(2) into a soil zone indicating reduced conditions by the presence of grey or blue mottles.

2. Flood irrigation determination.

Flood irrigation identification may be divided into natural and artificial flood irrigation.

a. Natural flood irrigation.

*(1) Identification of significant amounts of flood irrigated indicator plant species.

(2) Analysis of flood flow using recorded data and/or calculated data to determine agriculturally useful floods.

(3) Extrapolation of flood flow data on stream topography to determine the area inundated by the agriculturally useful flood.

b. Artificial flood irrigation.

(1) Introduction

(a) Artificial flood irrigation may be evaluated by identifying existing artifical flood irrigation on streams within and about the permit area. Existing artificial flood irrigation may be helpful in determining the potential for artificial flood irrigation.

(b) Evaluation of artificial flood irrigation is a detailed process. The local conservation district should be consulted about the site potential for artificial flood irrigation prior to any studies or analysis.

(2) Water Availability.

(a) Water availability may be evaluated in Part II.D.

(3) Procedures.

*(a) Identify streamside sites that are topographically flat enough to artificially flood irrigate.

*(b) Examine water right records and water diversion and transport structures on streams within and about the permit area.

*(c) Document existing and historical artificial flood irrigation on streams within and about the permit area.

*(d) Evaluate the feasibility of artificial flood irrigation operations discovered in (a), (b) and (c) above.

D. Identification of Water Quantity and Quality Sufficient for Flood Irrigation or Subirrigation Agricultural Activities

1. Subirrigation and natural flood irrigation.

Water quantity and quality are sufficient for subirrigation or natural flood irrigation agricultural activities if these irrigation activities are identified in II.C.1 and II.C.2.a. above.

2. Artificial flood irrigation.

a. Water quantity.

(1) Determine the volume of water availability for artificial flood irrigation.

(a) The mean annual flow should first be determined. The amount of this flow occurring during the growing season should be quantified.

(b) The volume of water from the two or three year flood should be determined.

(2) Identify an appropriate volume of water (such as 2 acre-feet per acre) required for artificial flood irrigation agricultural sites identified in II.C.2.b.

(3) Evaluate the existing or potential efficiency of the artificial flood irrigation system.

(4) Compare (1), (2), and (3) above.

b. Water quality.

(1) Identify the average water quality for flow during the growing season.

(2) Identify soil chemical and physical quality.

(3) Evaluate long term flood irrigation effects on soil quality.

III. EXTENT OF AN ALLUVIAL VALLEY FLOOR

A. Areal Extent

1. Map the unconsolidated stream laid deposits identified in II.B.

2. Map all areas identified as subirrigated and flood irrigated in II.C. Subtract those areas determined to be deficient in water quantity and/or quality identified in II.D.

3. The overlapping areas mapped in 1. and 2. above is the areal extent of the alluvial valley floor.

4. Artificial subirrigation.

Artificial subirrigation is not considered to be part of an alluvial valley floor. However, in areas where it is unclear whether artificial subirrigation is the cause of increased plant productivity in the area, that area will be considered part of the areal extent of the alluvial valley floor.

B. Depth

1. The depth of an alluvial valley floor is considered to be the depth of unconsolidated stream laid deposits under the area identified in III.A.3. above.

2. The depth should be identified on appropriate cross-sections.

IV. IMPORTANCE OF ALLUVIAL VALLEY FLOORS TO FARMING

A. Introduction.

Mining on alluvial valley floors is prohibited unless the affected alluvial valley floor is undeveloped rangeland which is not significant to farming, or, if the land is developed, it is of such small acreage that it would have a negligible impact on a farm's agricultural production (W.S. 35-11-406(h)(xiii)(A)). Section B, below provides criteria by which an alluvial valley floor may be classified as undeveloped rangeland. Appropriate maps and data should be provided to affirmatively demonstrate that areas determined to be undeveloped rangeland will meet the criteria of Section B. If the alluvial valley floor does not qualify as undeveloped rangeland, such lands should be considered developed and the applicant should provide the data requested in Section C so that the regulatory authority can determine the importance of the developed lands to a farm's agricultural production. Prior to conducting the assessment of Section B, the extent of the affected alluvial valley floor must be determined and the relationship of land uses (both historic and present) to the affected alluvial valley floor must be known.

B. Criteria for Classifying Alluvial Valley Floors as Undeveloped Rangeland.

Undeveloped rangeland occurs within an alluvial valley floor where:

1. No haylands or croplands supported by subirrigation or flood irrigation (natural or artificial) have existed, or

2. Where less than 50% of a grazing unit's carrying capacity (animal unit months-AUMs) is provided by the alluvial valley floor.

C. Data Used to Determine the Importance of Developed Land to a Farm's Agricultural Production.

Affected alluvial valley floors which do not qualify as undeveloped rangeland as defined in Section B above, shall be considered developed land and the importance of these lands to a farm's operation determined. Information concerning developed lands should reflect changes in ownership/tenancy and management practices for not less than five years prior to August 3, 1977 and to the present. Where developed lands exist, the following information for the farm(s) which relies upon the developed land for production should be provided in the mine permit application:

1. Information for total farm production to include:

   a. An inventory of typical livestock numbers.

   b. A cropland/hayland use summary for typical production and marketing years, including the following:

      (1) Acreage of each crop grown;

      (2) Yield per acre;

      (3) Total production harvested;

      (4) Estimated carrying capacity of aftermath(AUMs);

      (5) Disposition of the crops(percentage);

         (a) Amount fed to farm's livestock; and

         (b) Amount sold.

   c. Acreage and estimated carrying capacity (AUMs) of the range and pasture resources of the farm under typical weather conditions, excluding crop production and carrying capacity of crop aftermath.

2. Information for farm's developed lands within affected alluvial valley floor to include:

   a. Information as requested in 1.b. and c. above;

   b. A history of land uses and production; and

   c. Maps showing:

      (1) History of ownership/tenancy of the affected alluvial valley floor and adjacent lands.

      (2) History of land uses and management practices within and adjacent to the affected alluvial valley floor, e.g. fencing, irrigation structures, haylands, croplands, pasturelands, etc.

      (3) Extent of subirrigation.

      (4) Extent of affected alluvial valley floor.

Information requested in this section should be provided with an affidavit from the landowner/tenant. At the request of the landowner/tenant and in accordance with W.S. 35-11-1101(a) information concerning an operation may be retained as confidential information.

D. Importance of Developed Land to a Farm's Agricultural Production.

Where developed lands are involved in a proposed mining operation and where agricultural use of such developed lands would be interrupted, discontinued or precluded during mining, the loss of such lands from a farm's production capabilities must be assessed. If it is determined that the loss to farm production would only cause a negligible impact upon total production then a permit to mine may be granted. The equation of

$$P = 3 + 0.0014X$$

may be used to estimate farm production loss where "P" is the percentage of productive loss considered to be of a negligible impact to a Wyoming farm and "X" is the number of animal units of total farm production in excess of 100. The equation is a result of the following assumptions: (1) That a 3 percent loss in production to a small viable farming operation (100AUs) would constitute a production loss in excess of that which could be absorbed through management changes; and (2) that production loss which can be absorbed by viable farming operations will generally increase as total farm production increases. To utilize the equation, all farm production must be converted to animal units.

V. MATERIAL DAMAGE

A. Introduction

1. Alluvial valley floors studied for possible material damage includes both those that are within a permit area but will not be mined and those that are within "adjacent areas" to affected lands.

   Water quality parameters and the duration of monitoring may be referenced in Land Quality Division Guideline 4 and Guideline 8.

2. Identification of Adjacent Areas

   a. Identify aquifers affected by mining operations.

   b. Estimate the area of probable drawdown of those affected aquifers identified in "2.a." above.

   c. Pinpoint the affected aquifers identified in "2.a." above in hydraulic communication with the alluvial saturated zone within the area identified in "2.b." above.

   d. Adjacent areas are the areas identified in "2.c." and all alluvial valley floors downstream of the permit area to their confluence with the next major tributary.

B. Pre-mining Material Damage Assessment

1. Surface Water

   a. Surface water studies should include but not be limited to the following:

      (1) Changes in surface flow volume due to evaporation and/or dewatering.

      (2) Changes in surface water temperature.

      (3) Changes in the baseline surface water quality normally supplied to the valley.

      (4) Long term interruption of surface water quality and quantity supplied to the alluvial valley after reclamation.

   b. Specific studies

      (1) Water balance

         (a) Perform a reconnaissance baseline surface water balance.

         (b) Compare (1)(a) above to the estimated surface water balance during mining and reclamation.

         (c) Evaluate material damage to alluvial valley floors.

      (2) Erosion analysis

         (a) Determine baseline sediment load.

         (b) Compare (2)(a) above to the estimated sediment load during mining and reclamation.

         (c) Evaluate downstream material damage to alluvial valley floors.

      (3) Water quality

         (a) Determine baseline water quality.

         (b) Compare (3)(a) above to the estimated water quality during mining and reclamation.

         (c) Evaluate downstream material damage to alluvial valley floors.

2. Groundwater

   a. Groundwater studies should include but not be limited to the following:

      (1) Changes in the volume of groundwater inflow to the alluvial valley floor.

      (2) Changes in groundwater quality to the stream and the alluvial saturated zone.

      (3) Long term interruption of groundwater quality and quantity inflow to the alluvial valley after reclamation.

   b. Specific Studies.

      (1) Water balance

         (a) Perform a reconnaissance baseline groundwater balance.

         (b) Compare (1)(a) above to the groundwater balance during mining and reclamation.

         (c) Evaluate material damage to alluvial valley floors.

      (2) Aquifer hydraulic properties and water quality

         (a) Determine baseline water quality in the alluvial saturated zone.

         (b) Evaluate potential damage to aquifers within the adjacent area due to mining operations.

         (c) Using measured and predicted aquifer properties, generally model long-term and short-term changes in groundwater quality during mining and reclamation.

      (3) Water quality

         (a) Determine baseline water quality.

         (b) Compare (3)(a) above to the estimated water quality during mining and reclamation.

         (c) Evaluate downstream material damage to alluvial valley floors.

VI. ESSENTIAL HYDROLOGIC FUNCTIONS

A. Introduction

1. Essential hydrologic functions of flood irrigation and subirrigation agricultural activities refer to the alluvial valley floor identified in "Part III, Extent of the Alluvial Valley Floor". One way to preserve the "essential hydrologic functions" is to not mine the area. If the alluvial valley floor is to be mined, studies are required to collect the data necessary to identify the functions.

2. Part VI.B. recognizes four cases of alluvial valley floors. Part VI.B. references specific studies in Part VI.C. that may be performed for each case to help identify essential hydrologic functions.

3. Part VI.C. contains a potpourri of specific studies to aid in identifying essential hydrologic functions. Specific studies are found under these general categories;

   a. Erosion balance,
   b. Surface water balance,
   c. Alluvial saturated zone balance,
   d. Soil survey and analysis,
   e. Vegetation.

   A suggested method of using this section would be to identify the case of alluvial valley floor using Section B, then proceed to perform the studies referenced in Section C.

B. Alluvial Valley Floor Identification and Studies

1. Description and Identification Procedures of Alluvial Valley Floor Categories.
   a. "Case W" alluvial valley floor:
      (1) Description and identification procedure.
         (a) Streamflow is perennial.
   b. "Case X" alluvial valley floor.
      (1) Description
         (a) Streams for which the alluvial saturated zone storage capacity is great enough to contribute to stream flow. The stream is dry at some periods of the year.
      (2) Identification procedure.
         (a) Backhoe pit in alluvial material next to channel identifies an alluvial saturated zone.
         (b) Subirrigated vegetation appears nearly continuously down the channel length.
         (c) Hydrograph analysis or the comparison of alluvial water levels and stream stage identifies baseflow and interflow components.

   c. "Case Y" alluvial valley floor.
      (1) Description
         (a) Upland channel transports water, and flood flow recharges the alluvial saturated zone. The alluvial saturated zone storage capacity contributes, at most, only a few days of additional water to the channel.
      (2) Identification procedure
         (a) Backhoe pit in alluvial material next to the channel identifies an alluvial saturated zone.
         (b) Vegetation species identify only small, scattered, noncontinuous areas of subirrigation.
   d. "Case Z" alluvial valley floor.
      (1) Description
         (a) Upland channel acts only to transport water.
      (2) Identification procedure
         (a) Backhoe pit in alluvial material next to the channel shows no subirrigation of agriculturally useful plants from the alluvial saturated zone.

2. Specific studies suggested for alluvial valley floor cases identified in Section B.1.

   NOTE: All studies referenced in this section refer to studies in Part VI.C. All studies in Part VI.C. labeled with an asterisk (*) should be performed for all cases of alluvial valley floors.

   a. "Case W" alluvial valley floor.

      Study all asterisk (*) areas, plus;
      (1) Section 1. (a.(1), b.(1), d.(2), h.(1))
      (2) Section 2. (a.(1), a.(2), b.(1))
      (3) Section 3. (all)
      (4) Section 4. (all)
      (5) Section 5. (all)

   b. "Case X" alluvial valley floor.

      Study all asterisk (*) areas, plus;
      (1) Section 1. (a.(1), b.(1), d.(2), e.(1) h.(1))
      (2) Section 2. (a.(1), a.(2), b.(1)
      (3) Section 3. (a.(1), b.(1), b.(3), d.(2), d.(3))
      (4) Section 4. (all)
      (5) Section 5. (all)

   c. "Case Y" alluvial valley floor.

      Study all asterisk (*) areas, plus;
      (1) Section 1. (a.(1), b.(1), e.(1))
      (2) Section 2. (a.(1), a.(2), b.(2))
      (3) Section 3. (a.(1), d.(2), d.(4))
      (4) Section 4. (all)
      (5) Section 5. (all)

   d. "Case Z" alluvial valley floor

      Study all asterisk (*) areas, plus;
      (1) Section 1. (e.(1))
      (2) Section 2. (a.(3), b.(2))
      (3) Section 3. (* areas)
      (4) Section 4. (* areas)
      (5) Section 5. (all)

C. Specific Study Suggestions

1. Erosion balance

   a. Identify the fluvial history and the present fluvial state of the stream.
      (1) Map aggradational and degradational reaches of the stream within, upstream, and downstream of the permit area.

   b. Describe the longitudinal profile of the stream indicating depth to bedrock.
      (1) Discuss the map.

   c. Describe the existing channel, floodplain, and terrace profiles.
      *(1) Survey representative cross-sections, taken at approximately every 1500 feet of stream.

   d. Identify the channel and floodplain texture, sediment load, size distribution, and bedforms if present.
      *(1) Collect channel sediment samples, and separate bedload and washload fractions.
      (2) Analyze the texture of the surface of the floodplain.

   e. Identify vegetative stabilizers in the active channel.
      (1) Estimate the quantity within the channel.

   f. Identify channel slope
      *(1) Map on an appropriate scale (1"=400').

   g. Determine existing meander properties.
      *(1) Map on an appropriate scale (1"=400').
      *(2) Calculate sinuosity and other appropriate parameters.

   h. Calculate stream velocity.
      (1) Develop rating curves and estimate velocities using cross-sections identified in 1.c.(1) above at the estimated 2, 3, 5, 50 and 100 year flood.

Continued)

2. Surface water balance

   a. Collect streamflow records, taken upstream and downstream of the affected alluvial valley floor.
      This may encompass;
      (1) Continuous recording gages and records for one year.
      (2) Hydrograph and hyetograph comparison for a storm event.
      (3) Crest gages read monthly for one year.
      *(4) Discharge-volume-gage analysis.
      *(5) Monthly samples of water quality (reference L.Q.D. Guideline #4 and Supportive Handout).

   b. Collect streamflow records on tributaries affected or diverted by mining operations in the affected land.
      This may encompass;
      (1) Continuous recording gage records for one year.
      (2) Crest gages read monthly for one year.
      *(3) Discharge-volume-gage analysis.
      *(4) Monthly samples of water quality (reference L.Q.D. Guideline #4 and Supportive Handout).

3. Alluvial saturated zone water balance

   a. Identify configuration, location, and strata of the alluvial saturated zone; develop geologic cross-sections.
      (1) Use backhoe pits and/or strategically located drill holes and record geologic logs to bedrock.
   b. Describe the connection of the alluvial saturated zone with adjacent confined or unconfined aquifers.
      (1) Define the piezometric surface(s).
      (2) Perform pump tests to determine the range and distribution of aquifer properties.
      (3) Identify faults or other hydraulic boundaries.
   c. Identify specific lenses or perched water in the alluvial saturated zone.
      *(1) Use backhoe pits and/or strategically located drill holes and record geologist logs at appropriate intervals.
   d. Monitor subsurface groundwater in the alluvial saturated zone within, upstream and downstream of the permit area to adequatley define the dynamic interrelationships of the system.
      This may encompass;
      (1) Continuous recording gages on piezometers and wells completed in the alluvial saturated zone on both sides of the stream for one year.
      (2) Monthly readings on piezometers and wells completed in the alluvial saturated zone on both sides of the stream for one year.
      (3) Monthly quality samples in the alluvial saturated zone (reference L.Q.D. Guideline #4).
      (4) Quarterly quality samples in the alluvial saturated zone (reference L.Q.D. Guideline #4).

I. ntinued)

4. Soil survey and analysis

   a. Perform a pre-mining soil assessment.
      *(1) Conduct a soil survey (reference L.Q.D. Guideline #1).
   b. Determine soil suitability for flood irrigation and sub-irrigation.
      *(1) Evaluate soil suitability. (reference L.Q.D. Guideline #3).
   c. Determine soil moisture characteristics and lithology.
      (1) Evaluate and describe stream laid textural layers if present and describe both the potential and the actual moisture holding characteristics of each layer.

5. Vegetation
   *a. Perform a pre-mining vegetation inventory (reference L.Q.D. Guideline #2).

I. MONITORING DURING MINING AND RECLAMATION

A. Groundwater

1. Monitor water quality and quantity in affected aquifers in communication with the alluvial saturated zone, after determining baseline.

2. Monitor water quality and quantity in the alluvial aquifer(s) if needed, after determining baseline.

B. Surface water

1. Monitor surface water quantity and quality after determining baseline for quantity and quality.

C. Vegetation

1. Monitor subirrigated vegetation communities to identify potential changes.

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

RECEIVED
MAR 23 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

EPLY REFER TO:
L1419 (RMR)PC

MAR 2 1 1979

Memorandum

To: District Manager, Rawlins District, Bureau of Land Management, Rawlins, Wyoming

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Hanna and Overland Management Framework Plan Supplements

We have reviewed the subject supplements relating to the Hanna Basin and Red Rim-China Butte areas. No units of the National Park System appear to be affected; thus, we offer no comment.

Richard A. Strait

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
2120 Capitol Ave., Room 7009
Cheyenne, Wyoming 82001

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FEB 05 1979
[illegible]

IN REPLY REFER TO:

February 2, 1979

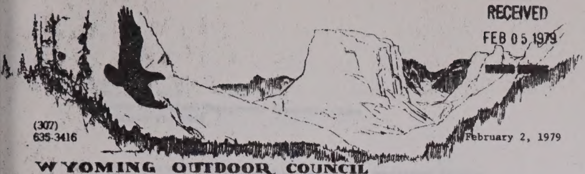
Memorandum

To: District Manager, Bureau of Land Management, P.O. Box 670, Rawlins, Wyoming 82301

From: Coal Coordinator, Wyoming

Subject: Hanna and Overland Planning Effort

Thank you for your letter of January 23, 1979 concerning the Hanna and Overland planning effort. On behalf of the Fish and Wildlife Service, we appreciate your invitation for involvement. We will help in any way we are able.



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(307)
635-3416

WYOMING OUTDOOR COUNCIL
P.O. Box 1184 2003 Central Cheyenne, WY 82001

February 2, 1979

Fred Wolf
District Manager
Rawlins District Office, BLM
P.O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Wolf,

Thank you very much for your communication regarding the revision of the Hanna and Overland Management Framework Plans. The Outdoor Council is indeed very interested in participating in the process. We are particularlyinterested in the proper application of the unsuitability standards, coal demand estimations and quality citizen input.

In the preparation of the federal EIS on coal leasing, it was policy to release the Department of Interior's and BLM's working papers to the public as soon as possible. I would like to know and encourage that the same policy be followed in the revision of the Hanna and Overland MFPs.

I would also appreciate it if you would send copies of the existing plans so that I may familiarize myself personally with their content.

Sometime in February, I would like to meet with you to discuss the progress of the revision. Since the state legislature is in session, I can not at this time positively commit myself to a meeting, but I do want you to know that if it is at all possible I would like to meet before the public meeting.

On another topice of mutual concern, I would like to be kept abreast of the wilderness review process in the Rawlins district. Bruce Hamilton, Northern Great Plains Representative for the Sierra Club, informed me that a staff person from your office was interested in meeting with us to discuss the review and pour over maps. Unfortunately, this was delayed because I had to leave Lander to return to Cheyenne to assist in the lobby effort. I am still very much interested in the meeting. If you could pass this along to the appropriate person, it would be of great assistance toward developing communication for this review process as well.

Thank you for your letter.

Sincerely,

Debra East
Field Representative
Wyoming Outdoor Council

— Recycled Paper —

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MAR 28 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P. O. Box 2440, Casper, Wyoming 82602

March 27, 1979

Fred Wolf, District Manager
Bureau of Land Management
Rawlins District
P. O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Wolf:

Thank you for the opportunity to review and comment on the Hanna and Overland Management Framework Plan Supplements.

My staff has reviewed these supplements and we have no comment for improvement at this time.

Sincerely,

Frank S. Dickson

Frank S. Dickson
State Conservationist

UNITED STATES GOVERNMENT
Memorandum
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

IN REPLY REFER TO:
3500

To : Floyd Ewing, Area Manager, MBRA
Date: MAR 1 3 [illegible]

From : Wally Stiles, Geologist, Div. of Resources

Subject : Coal Unsuitability meeting with Coal Companies at Hanna, Wyoming

A meeting was held on February 28, 1979, with coal companies concerning the application of the coal unsuitability criteria to Hanna Basin and Red Rim/China Butte KRCRAS.

Personnel in attendance were as follows:

Ed Ziolkowski and A. M. Hannum - Energy Development Corp.
T. R. Irvin and Joel Strid - Carbon County Coal Company
Jim Johnson - Arch Mineral Corporation
Fred Wolf, Ron Wenker, Floyd Ewing and Wally Stiles, Rawlins District Office, Bureau of Land Management
Andrew Tarshis - WSO, Bureau of Land Management

The application of the coal unsuitability criteria was explained and a presentation of the coal unsuitability maps was conducted. After the presentation, a question and answer period was held in which the coal companies expressed their concerns about the various acreages that are acceptable and unsuitable by either multiple use analysis and unsuitability criteria, and the location and amount of the unsuitable acres.

The coal companies' main concern was with the areas deemed unsuitable in the Red Rim/China Butte area. Concern was also expressed over the criteria and the fact that they did not take into consideration the checkerboard land pattern and the other landowners. Feeling was that the unsuitability criteria did not work very well on the checkerboard and did not consider underground mining.

GSC-1941-8
Mar. 1974

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FEB 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

Advisory
Council On
Historic
Preservation

1522 K Street NW.
Washington D.C.
20005

February 21, 1979

Mr. Fred Wolf
District Manager
Rawlins District Office
Bureau of Land Management
P. O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Wolf:

This is in response to your letter of January 23, 1979, concerning the revision of the Hanna and Overland Management Framework Plans (MFPs) for coal development in the Rawlins District of the Bureau of Land Management (BLM) in Wyoming.

As part of this planning process the BLM should arrange to have the areas impacted by coal development surveyed to identify cultural properties included in or eligible for inclusion in the National Register of Historic Places in accordance with the "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800). After the survey is complete the BLM should consult the Wyoming Historic Preservation Officer to determine whether any property included in or eligible for inclusion in the National Register will be affected by the proposed undertaking. If such a property will be affected and the project cannot be redesigned to avoid that effect, then the BLM is required to afford the Council an opportunity to comment on the undertaking pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320).

Should any effects upon cultural properties included in or eligible for inclusion in the National Register be identified in the development of the MFPs we look forward to working with the BLM in accordance with the regulations promulgated by the Council that become effective March 1, 1979, (January 30, 1979, Federal Register).

Should you have any questions or require any assistance in this matter, please contact Brit Allan Storey of my staff at (303) 234-4946, an FTS number or at P. O. Box 25085, Denver, Colorado 80225.

Sincerely,

Louis S. Wall

Louis S. Wall
Chief, Western Office
of Review and Compliance

ROCKY MOUNTAIN
ENERGY COMPANY

ENVIRONMENTAL SERVICES
CLARK M BOLSER
MANAGER

March 23, 1979

RECI
MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

Mr. Fred Wolf
District Manager
Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, Wyoming 82301

Gentlemen:

Re: Proposed Supplemental
MFP--Overland Planning Unit

Please find enclosed Rocky Mountain Energy's formal written comments concerning the BLM's proposed supplemental MFP for the Overland Planning Unit.

As you are aware from our recent discussions and our statement at the March 14, 1979 hearing in Rawlins, we are extremely concerned about the potential effect the BLM's management framework planning efforts under the federal coal management program could have on our ability to develop private coal in the Red Rim/China Butte area. Further, we are convinced by this first "test of the process" that unless revisions are made to the federal coal management program and the BLM multiple use planning objectives, little if any additional federal or private coal will be developed in southern Wyoming. I believe we are in agreement that the "checkerboard" land ownership pattern in southern Wyoming makes it difficult for either the BLM, Rocky Mountain Energy Company or private surface owners to effectively manage its own lands and resources without direct impact on the others.

In our comments we have attempted to detail how we believe that the BLM erred in applying the unsuitability criteria and its multiple use considerations. We trust that these comments will assist the BLM in reevaluating its proposed MFP. These comments should also serve to illustrate the problems inherent in trying to implement the proposed federal coal management program in the southern Wyoming checkerboard area.

Sincerely yours,

Clark M. Bolser

Enclosure

cc: Mr. Dan Baker (w/ enclosure)

[illegible] HARLAN STREET [illegible]

[illegible]IVER
[illegible]2611 Ext. 270

ROCK SPRINGS
(307) 362-7870 Ext. 270

SWEETWATER COUNTY PLANNING DEPARTMENT
P. O. BOX 791
GREEN RIVER, WYOMING 82935

RECEIVED
MAR 27 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

March 21, 1979

Bureau of Land Management
Rawlins District Office
P. O. Box 670
Rawlins, Wyoming 82301

Gentlemen:

The Sweetwater County Planning and Zoning Commission has serious reservations on the strict application of the "Unsuitability Criteria" as applied in the proposed revisions to the Overland Management Framework Plan defining potential coal development.

For example, Criteria #7, "Historic Lands and Sites", should be limited to visible portions of a historic trail system and a one-half mile buffer along the entire length of the Oregon Trail system would unnecessarily encumber multiple land uses.

Further, time allotted to Sweetwater County for review of this area and the proposed revisions to the Overland Management Framework Plan is totally inadequate for any sophisticated response. This is particularly true during the severe winter weather. Therefore, the Sweetwater County Planning and Zoning Commission reserves additional time to forward comments.

Very truly yours,

Robert Volcic

Robert Volcic, Chairman
Sweetwater County Planning &
Zoning Commission

RV/va

cc: Board of County Commissioners

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MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

FINAL COMMENTS OF
ROCKY MOUNTAIN ENERGY COMPANY
ON THE
BUREAU OF LAND MANAGEMENT'S
OVERLAND MANAGEMENT FRAMEWORK
PLAN SUPPLEMENT

March 23, 1979

Rocky Mountain Energy Company
4704 Harlan Street
Denver, Colorado 80212
(303) 433-6841

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Introduction

The Bureau of Land Management has asked for comments on the Overland Management Framework Plan Supplement issued in February 1979. Rocky Mountain Energy Company ("RMEC"), as the holder of substantial mineral rights in the Overland area, is vitally concerned with the land use proposals made by the BLM and appreciates the opportunity of commenting on the MFP Supplement.

In preparing the revised MFP the BLM was guided by the Draft Environmental Statement of the Federal Coal Management Program. RMEC has previously submitted detailed comments on this statement, and many of the issues raised in those comments have immediate bearing on the Overland MFP. Unfortunately, the MFP revisions have confirmed our conclusions about the inadequacies of the proposed system for determining what federal lands are suitable for coal development. If the current BLM decisions are allowed to reach fruition, large areas of federal land containing significant reserves of high quality coal will be classified as "unsuitable" for coal development. It is RMEC's position that this result is not desirable from a federal policy standpoint, that it is not mandated by any of the federal or state statutes regulating the mining of coal, and that it is not necessary as a means of preserving existing environmental standards or protecting competing land use values.

Any discussion of land use planning in the southern Wyoming area should begin with the understanding that the continued development

and production of coal in that region is a desirable goal. The Draft EIS states that it is the "judgment of the President and Congress that the federal government should encourage and foster the use of coal" (p. 2-50). It is especially important to keep this in mind when it becomes apparent that the enormous value of the coal resource to the nation has been almost completely discounted in the planning process.

A second important fact to remember is that the particular area under study is characterized by the unique checkerboard ownership pattern of the land grant. Presumably, the Coal Management Program was created with the model of private and federal holdings being significantly larger than the one square mile sections found in the Overland area. This would be a logical assumption as land grant areas comprise a relatively small portion of the total geographic area where the majority of federal lands are located. As a result of the checkerboard ownership pattern, the areas involved in the Overland MFP are affected by application of the unsuitability criteria in a manner that is quite different from that which would be the case if the tracts of privately owned land in the areas were larger. The process operates in the checkerboard area to negatively affect private coal development opportunities in a manner that cannot have been intended by Congress under SMCRA or by the President in his Environmental Message of 1977. As will be discussed later, RMEC is of the opinion that a strong case can be made that the coal reserves in the checkerboard areas should be evaluated by a process more closely related to their unique characteristics.

General Overview

The MFP for the Red Rim-China Butte area designates the northern half and southern tip of this area as "unsuitable" for coal development. These designations are made as the result of applying 24 unsuitability criteria (as well as applicable exceptions) and by making multiple use decisions based upon competing land uses. This process was accomplished without consideration of industry input as to mine plans, reclamation and mitigation strategies, and economic analysis of the proposed mines. The task that officials at the local BLM offices were asked to perform was simply unachievable. To properly apply the criteria and all the exceptions would require a data base far more elaborate than anything currently available to the BLM. Furthermore, to acquire such data would take the BLM considerably longer than the time allotted to do so. In fact, a task force has recently been formed to study the question of what exact data is necessary. Also, there has been a flurry of memos from the Department of the Interior, revising, defining and explaining the criteria to the local offices. All this activity indicates that the entire program is currently in a state of development. As such, final determinations based upon that program are premature.

By RMEC estimate, the entire Red Rim-China Butte area has approximately 230 million tons of surface minable coal reserves. The areas remaining as "acceptable" contain 110 million tons; however, much of this is rendered unrecoverable for, without the federal sections, it occurs in units that are too small to mine economically.

There are a number of serious defects in the manner in which the unsuitability criteria have been applied in the Overland MFP. Almost without exception the data necessary for applying the criteria is not available. Despite this fact, the local BLM categorized numerous tracts as "unsuitable", even though their clear directive was to make certain that their determinations were legally defensible. As we shall see, in many cases the BLM's decisions could not be proven even by a preponderance of the evidence, the least stringent test recognized by the law.

The other test used to evaluate the federal lands in the area, namely multiple use, is also subject to strong criticism. The major objection here is that multiple use, when focused on localized areas, presents an unrealistic picture that devalues coal in any area where coal is located.

The remainder of these comments deal with the concerns raised above in a more detailed fashion and present RMEC's suggestions as to what changes might be beneficial. Time constraints as well as lack of sufficient data limit our ability to provide a more thorough discussion in certain respects. In fact, lack of pertinent data is a ubiquitous problem that underscores the entire discussion and buttresses RMEC's claim that almost all determinations of unsuitability should await further study. RMEC also wishes to restate that the criticisms it makes are not a reflection on the BLM personnel so much as the inevitable result of systemic defects.

General Criteria Objections

Under the procedure utilized by the BLM to update the Overland planning unit, it was impossible for them to consider site-specific information regarding the proposed mines because industry input was not sought until after the BLM review. When the areas designated "unsuitable" are viewed with the knowledge of the proposed mine plan at Red Rim, it becomes evident that the BLM is grossly overestimating the impact of coal mining upon the locality.

The mine plan for Red Rim encompasses an area of approximately 8,000 acres. Over the anticipated 31-year mine life, only some 258 acres will be disturbed in any one year. Approximately one third of this acreage will be within the mine boundaries but will not otherwise be directly affected by mining activity. Assuming a two-year lead time for reclamation to begin to take effect, the net result is that at any time only 750 acres are in various stages of mine involvement. Of this 750 acres, half is private land over which the BLM has no control. When this small amount of land to be temporarily disturbed is contrasted, for example, with the 829,600 acres in south-central Wyoming that the BLM estimates is crucial winter range for pronghorn antelope, it becomes apparent that sacrificing all the coal in Red Rim is difficult to justify. Obviously, such a result is not intended by the Federal Coal Management Program.

Another difficulty that arises as a result of the lack of industry input is that the BLM has portrayed the remaining coal reserves in a manner

that simply does not comport with reality. The Overland Revision states that "the acceptable areas contain over 110 million tons of economically recoverable coal". This statement reflects a simplistic view of coal development and is outside the expertise of the BLM. It is obvious that time restrictions did not allow the BLM to make such an analysis.

The marketing of coal is a complex and sophisticated endeavor. Numerous variables go into determining the marketability of coal reserves. The cost to produce the coal, shipping costs, BTU content, sulphur content, demand, cost and availability of alternate fuels, etc., are some of the factors that must be considered. The mere fact that lands labeled "acceptable" overlie 110 million tons of coal does not automatically make that coal "economically recoverable". BLM is simply not in a position to make such an appraisal.

Dealing specifically with Red Rim, the mining plan calls for mining in the northern area and moving southward. However, given the large areas deemed "unsuitable", this plan is no longer useful. Large sections in the north are completely carved out, and the remaining private sections do not comprise logical mining units. Even though there are a few areas containing some "acceptable" federal sections, the magnitude of the project is reduced to such an extent that it is no longer viable.

These problems and others like them point out what should be an obvious fact--that industry is a logical participant in the coal planning process. By inviting industry comment only after the determinations are

made, industry and the BLM can easily become adversaries while industry "attacks" the plan that the Bureau "defends". We suggest that a better approach in the future would be to obtain industry input before and not after data base evaluations and land use decisions are made.

The Department of the Interior instructed the local BLM office that determination of any area to be "unsuitable" was the first step toward a legal designation as such. The reverse was not true since there was no certainty that any commitment of resources would occur; a classification of "acceptable" was not the first step toward a similar legal designation. Furthermore, before an "acceptable" area could actually be leased and mined, all laws, regulations, permit requirements, etc., would have to be complied with, providing a further screen. In this context, the State BLM Director instructed that only those areas "particularly sensitive or obviously excludable" were to be classified "unsuitable". Despite these cautions, the "unsuitable" category was used with little restraint.

Where there was any doubt about the applicability of a criteria, it was to be resolved, or else placed in the "acceptable pending further study" category. As comment under each criteria shows, substantial doubt was present in almost every unsuitability determination.

Another shortcoming of the BLM review was its very narrow reading of the criteria language. This created extremely literal interpretation especially in the case of criteria 13 and 15. The ostensible purpose was

to avoid bias; however, such literal interpretation was not implemented in the case of a number of the exceptions. The exceptions to the criteria were applied in the most haphazard way. For example, BLM stated that mitigation could not be achieved, or that it would be uneconomic. There was no basis for such assumptions and absolutely no data to support them. Without reference to the mine plans, they could not hope to know what mitigation would be required.

There were numerous procedural errors in the implementation of the criteria. These involved inter-agency coordination and ranged from complete failure to conduct a specified task to superficial interaction.

The most widespread error was the failure to collect sufficient data, and the subsequent failure to place lands for which data was lacking in the "acceptable pending further study" category. This is a mistake of immense proportion, for it is impossible to preserve the status quo of an area when one misinterprets the nature of that area.

Specific Criteria Objections

Criterion #7 Historic Lands and Sites

The BLM arbitrarily constructed a one-half mile buffer along the Overland Trail and Washakie Stage Station. This was done without any information as to how the proposed mine would affect this area, and what buffer might be appropriate. By way of comparison, an occupied dwelling, school or church is given a 300 foot buffer, as compared to the

2,640 feet that is required here. That the Overland Trail needs a buffer eight times as large as an occupied home has certainly not been justified.

Criterion #11 Bald and Golden Eagle Nests

One area is eliminated on Red Rim because of a golden eagle nest. Further study shows this nest to be on private land. It should then be the responsibility of the U.S. Fish and Wildlife Service. An exception allows the nest to be moved if the Fish and Wildlife Service approves, but that agency was not contacted regarding the feasibility of this activity.

It is specifically stated that mining within the buffer zone is allowed during the nonbreeding season. Unfortunately, the BLM exception analysis precludes mining within the buffer zone at any time, clearly a contradiction to this criterion.

Criterion #13 Falcon Cliff Nesting Sites

The presence of a sparrow hawk nest was the reason for classifying certain land as "unsuitable". This falcon is by no means unique or endangered in the area of concern. Also, the sparrow hawk adapts well to human activity. Through a taxonomic technicality, protection of the adaptive and plentiful sparrow hawk, not shown to be in need of protection, has further limited coal development. In fact, by establishment of a quarter mile buffer, the common sparrow hawk is given the same level of protection afforded the bald eagle. Such a result hardly seems rooted in logic. BLM wildlife biologists are, no doubt, aware that there is no question

about the stability of the sparrow hawk at the species level. Yet there is no evidence in BLM's analysis that this exceptional situation was given any special consideration. This illustrates the difficulty confronting BLM as a result of the lack of criteria clarity.

A further evaluation of BLM's analysis also shows that the two prairie falcon nesting sites observed in the Red Rim area are on private surface. Criterion 13 specifically indicates that "Federal land containing falcon cliff nesting sites with active nests and a buffer zone of Federal lands 1/4 mile radius from the nest... shall be considered unsuitable for coal mining..." Recognizing that protection of these nesting sites falls within the jurisdiction of the U.S.F.W.S., it seems obvious that some type of interagency coordination would have been appropriate before designating any areas "unsuitable". There is no evidence in BLM's analysis that there was interagency consultation concerning this matter.

Criterion #14 High Interest Migratory Birds

This criterion is designed to protect high priority habitat, on federal lands, of migratory birds of national interest as determined jointly by the BLM and the Fish and Wildlife Services. Given this fact, and knowing that their determinations were to be supportable, the BLM identified eight sites in the Red Rim area alone as "unsuitable" under this criterion. Six of the eight sites were on private land, clearly not within the criterion. There is absolutely no evidence which shows that the habitat is high priority. In fact, BLM's own worksheets indicate that most of

the region is suitable habitat. There is obviously substantial doubt as to the high priority of these sites. Finally, BLM and U.S.F.W.S. did not develop any list of high interest birds. For this reason alone, no areas should have been eliminated through the use of this criterion.

Before the criterion can be implemented as intended, a list of high interest birds must be developed. Furthermore, an effort must be made to determine whether the area is high priority habitat; inclusion of every nest is not in accord with identifying only high priority areas. Finally, the process should be limited to federal land only, and then in conjunction with industry, to determine what effect, if any, mining would have and how that effect can be minimized.

Criterion #15 State Resident Fish and Wildlife

Antelope Critical Winter Range

The application of Criterion 15 eliminated the largest amount of federal land. Unfortunately, this was also the criterion where the greatest number of errors of application were made. The areas designated as "unsuitable" were classified as most critical winter range for antelope and/or sage grouse strutting grounds.

The data base utilized to make winter range determinations was woefully inadequate. The winter population was determined after a small number of flights over a two-month period. Secondly, even an experienced observer will attest to the high potential for counting errors when censusing this easily harassed wildlife species (antelope are harassed by low-flying planes and may run for a considerable distance, thereby

creating the possibility of counting the same herd several times). Furthermore, the statistical reliability of this short-term survey is open to question.

The BLM, based upon their counts for the Red Rim-China Butte areas, attempted to determine, on a percentage basis, what fractions of a total herd these animals represented. The total herd population estimate, however, was based on Wyoming Game and Fish Department's censuses conducted once every three to five years over the entire herd range, harvest data and ground observation. Since two entirely different methods were used, an attempt to relate one to another is apt to be grossly inaccurate. In fact, the BLM analysis does not support their assumption that the animals seen during the 1978-79 winter were part of the specific herd unit for which serious effects are speculated.

The problems with enumeration and definition of herd associations are not the only difficulties in the BLM analysis. Another occurs in defining the area as most critical winter range. This classification came about largely because the animal population was seen there during the admittedly severe winter of 1978-79. Residents of the area tell us that the historic precipitation pattern of the area is that Red Rim is under a deep snow cover, and because of this, antelope are not present during the winter in great numbers. Whereas this type of information lacks scientific verification, it points at the problem of the approach taken by the BLM.

The BLM, as stated, determined the Red Rim area to be most critical winter range. The Wyoming Game and Fish Department identified a different area, east of Red Rim, as most critical. No discussion was held between the two agencies to resolve this conflict. Furthermore, no habitat evaluations were performed to determine if adjacent sites would be capable of supporting displaced animals, despite the fact that under BLM's own evaluation, the vast majority of the herd is wintering elsewhere.

A basic conceptual fault associated with application of the criterion's exclusion mechanism is the supposition that the temporary removal of the speculated critical winter range will result in significant adverse impacts to pronghorn. When considered in terms of the estimated North American pronghorn population (400,000 animals), the number of animals that could be affected on a worst-case basis (1,000 animals) represents only a tiny fraction of this amount. It should be noted that this assumes that all of the 1,000 animals die; there are no attempts to mitigate development impacts; the entire critical winter range area is mined; and that the area of concern actually is critical winter range. This also assumes that, through the required coordination with state government, management objectives could not be temporarily adjusted to accommodate mining. We believe that with proper mitigation, impacts can be reduced to an insignificant level even on a local basis.

When considered on a regional basis, potential impacts are still insignificant. The maximum of 1,000 animals to be affected represents only about 2.5 percent of the estimated pronghorn population for south-central Wyoming. The acreage of critical winter range to be affected is equally insignificant. In the Red Rim area, for example, the tract of critical winter range (approximately 19,000 acres) represents approximately 2 percent of the 829,600 acres of crucial winter range estimated to exist in south-central Wyoming. The actual acreage to be affected by mining (less than 8,000 acres) represents less than 1 percent of this figure.

The BLM also assumed that mitigation could not be performed economically. This, of course, they are without sufficient information to determine. Techniques such as planting browse species, stimulating available browse growth, supplementary feeding, snow fencing and removal of obstacles to antelope movements, could be successfully implemented to mitigate the effects mining might have on the antelope, or its required habitat. To ignore these mitigation possibilities was an error on the part of the BLM.

To put these questions in a realistic perspective, BLM must recognize that this wildlife resource is not managed solely for aesthetic purposes or purely as part of a general environmental maintenance program. Populations are evaluated and managed largely to meet recreational demands. Just as management controls are responsive to the effects of climatic

conditions (such as major herd size decreases resulting from this year's severe winter), management objectives can be adjusted to accommodate the far more limited effects of mining. Before these coal resources are arbitrarily eliminated from potential development, their value and the economic dangers of their loss must be weighed against the values of these recreational resources.

We have gone into detail here simply to show that the BLM's decisions are not justified, that they did not resolve all doubt prior to an unsuitability determination, and that they did not use the "unsuitable" category only to screen out areas obviously excludable. Although certainly not the only one, this is one of the most dramatic cases of misapplication of the criteria.

We are encouraged by the recent clarifications of criterion 15 issued by the Associate Director of the BLM in his March 2 memorandum. We feel that if the criterion is applied in keeping with the redefinition of the exceptions and a realistic reappraisal of potential mitigations, there should be no problem in placing these areas within an "acceptable" category. In contrast to BLM's literal interpretations of the criterion, the Associate Director has defined "complete mitigation" in the following manner:

> "... replacement of wildlife habitat or population characteristics, using the best technology currently available, such that the habitat or populations will be essentially of the same quality and quantity as they were prior to the impacts necessitating mitigation. True, 'complete' mitigation, per se, is impossible to obtain under the current scientific state-of-the-art for wildlife management."

It is clear from this interpretation that mitigation can be successful and "complete", even with some minor wildlife losses.

The meaning of "adverse effects" has also been redefined as follows: "a situation where wildlife habitat or populations will be maintained at their present levels over an extended period of time."

We strongly believe that, on a long-term basis, wildlife populations can be maintained at their current levels.

Sage Grouse Strutting Grounds

Sage grouse, like antelope, are protected by criterion 15. As was also true in the case of the antelope, the BLM consulted with the Wyoming Game and Fish Department on a very limited basis. Again, although the criterion states federal lands, not all the strutting sites were on federal land. The buffer zones in this instance also have wide-ranging effects far beyond the quarter mile limit on adjacent private sections. Finally, the BLM did not inquire about any efforts to relocate strutting grounds despite the fact that recent Wyoming studies indicate this may be possible. In short, the criterion was applied without hesitation, the exception and possibility of mitigation casually dismissed.

Assuming even total removal of sage grouse habitat from the Red Rim-China Butte area, there would be no serious effects to this species on a regional basis. According to a BLM regional analysis for south-central Wyoming, there are 316,900 acres of crucial nesting habitat and well over 100 known strutting grounds in this area. BLM wildlife

biologists have noted that superior breeding habitat is present to the south of Red Rim-China Butte. It was estimated that over 20 times the number of strutting grounds encountered in Red Rim-China Butte were identified.

Criterion #16 Wetlands

Perhaps no criterion exemplifies the arbitrary nature of the classification process better than Wetlands. In discussions with BLM officials it was admitted to RMEC that the only applicable part of the Wetlands criterion was part 3, "riverine wetland systems, lower perennial and upper perennial systems with flow greater than five cubic feet per second..." The BLM began applying the criterion in November 1978, making flow measurement impossible, and there was no existing data. Nonetheless, Muddy, Fillmore and Separation Creeks were designated "unsuitable" as wetlands. No effort was made to determine if the streams were perennial or intermittent, if they have riparian values larger than one linear mile or if they have sufficient water flow to support water fowl, fish and game. In fact, both Fillmore and Separation Creeks are shown as intermittant on the U.S.G.S. topographic maps. The U.S. Army Corps of Engineers considers such streams to contain less than five cubic feet per second flow.

What is particularly pernicious about this is that all wetlands are already fully protected under Section 404 of the Federal Waters Pollution Control Act. Both the Army Corps of Engineers and the EPA are assigned by this Act to administer over the use, management and protection of all

wetland areas. Permits will be issued only upon a showing that water quality and quantity, as well as fish and wildlife, will not be adversely affected.

BLM has not demonstrated that mining will "significantly affect the wetlands" or that reclamation will not provide complete restoration. In fact, the very designation of the areas as wetlands is highly suspect. Yet, once again, even though other agencies have specific statutory authority to regulate activity in such areas, they have been classified "unsuitable". The BLM action under these circumstances is tantamount to a policy that mining shall not take place where water is present.

Criterion #17 Floodplains

The MFP revisions classify areas around Muddy, Fillmore and Separation Creeks as floodplains and therefore unsuitable. In a March 2 discussion with local BLM officials they conceded that exception two to this criterion applied and that no lands should be excluded on this basis. We have not yet seen a revision indicating this change, but we feel certain it is correct and that the revision will be forthcoming. This is yet another illustration of the fact that where the criteria were applied easily, the exceptions were often overlooked.

Criterion #23 Alluvial Valley Floors

The BLM unilaterally devised their own method for determining what was an alluvial valley floor (AVF). This was done, RMEC

was told, because had they used the method specified in SMCRA as they were instructed, they would have had insufficient data and all suspected areas would have been "acceptable pending further study".

The method used did not identify AVF's "according to the definitions and standards of SMCRA, final alluvial floor guidelines, and approved State programs" as the Draft Programmatic EIS dictates. Instead, they formulated their own rudimentary tests. The proper tests for identifying AVF's and those called for in the criteria are specific and comprehensive. BLM's method is not an adequate alternative.

Furthermore, the methods used by BLM to identify AVF's and the conclusions they reached were not approved by the Wyoming Department of Environmental Quality. This is a requirement of this criterion.

BLM did not demonstrate that mining what they identified as AVF's "would interupt, discontinue or preclude farming" as mandated in the criterion. They merely assumed that all mining activity would disturb whatever farming was present, and therefore classified the area as "unsuitable".

Before an area is classified by virtue of this criterion, it is essential that BLM consult with and obtain the concurrence of the Wyoming DEQ in making a determination. Secondly, BLM must adhere to the SMCRA provisions regarding AVF identification. And third, BLM must show what effect, if any, mining will have on farming. By insisting that this be done, RMEC is only asking that BLM comply with agency requirements.

Multiple Use

A number of sections and partial sections were designated as "unacceptable" as a result of multiple use considerations. This is worthy of note because in 1977 the entire area was determined to be "acceptable". The reason that formerly acceptable areas have been changed is twofold. First, the area under consideration was much smaller, and secondly, since multiple use decisions were being made in conjunction with the application of the unsuitability criteria, a bootstrapping effect occurred. The result was that far more land was excluded through multiple use analysis that would have been had the unsuitability criteria not been involved.

The multiple use determinations must be applied on a regional basis. By definition it is a trade-off process that takes an overall view. To do otherwise works to devalue any resource not available on a wide basis, in this instance coal. When viewed in a small area, it is difficult not to place a large value on the existing riparian habitat, for example. However, when a broader view is taken, it becomes apparent that riparian habitat of a similar or superior nature is plentiful within the region. Conversely, coal is found in only very small areas. In this framework, a trade-off that seems eminently reasonable when viewed in a vacuum becomes very costly when seen in proper perspective.

The BLM has admitted to RMEC in a public meeting that its multiple use decisions were affected by the fact that they were made contemporaneously with criteria application. This is probably a very human

reaction but its effect is to invalidate the intent of the program. In light of this admission, we believe the multiple use determinations should be reevaluated.

Additional Considerations

The difficulties listed above in RMEC's opinion pose serious problems for the Coal Management Program. In addition, we see several conceptual shortcomings which operate outside the application of the criteria but which nonetheless should be considered in the MFP.

The first of these problems is the potential economic impact on the area. If allowed to stand unmodified, the criteria render the entire Red Rim project unfeasible. The cost of this in terms of lost revenues is staggering. The estimated 30-year severance and production taxes would be $136,178,000. Over $10,000,000 in county property taxes and $6,000,000 in sales taxes would be lost. If tax revenues of this magnitude are to be lost in order to protect these resources, we suggest that the Governor should become involved in the process to determine if it is his judgment that such considerations outweigh the value of coal development. Such a tax loss should be at the end of a thorough examination with all available data utilized. In fact, the loss is now caused by a haphazard and arbitrary elimination process.

In performing their analysis, we think it is beyond BLM's jurisdiction to suggest that the inevitable result of mining is that conditions will occur that would violate state and/or federal standards, and therefore

areas should be designated "unsuitable". Statements such as "could degrade air quality"; "could degrade water quality"; "reclamation may not be able to restore aquifers", are not appropriate rationale for invoking the unsuitability criteria. The Wyoming DEQ, OSM and EPA all have authority as well as the expertise to make those determinations and would do so prior to actual commencement of mining.

The classification of federal lands also completely ignores the value of coal (with exception of the fact it should be considered in multiple use decisions). While the presence of a single sparrow hawk nest could result in an unsuitability determineation, this decision could not be overruled no matter how many tons of high quality coal are completely lost. Although no one advocates a situation where coal takes precedence over all other land uses, neither should it be the last in line of consideration. All potential resources must be considered in order to maximize the finite potential of the land. Ignoring the value of coal completely, inevitably gives other values a disproportionate effect on land use decisions.

The BLM completely failed to communicate with land owners on the private sections. Our discussions with these people have shown that severe changes in the environment are possible as a result of contemplated actions such as range modification and the fencing of entire sections. Should the surface owner fence the land, then Red Rim would cease to be the most critical winter range as BLM claims it is. Antelope would no longer have access to the area, and there would be no need for protection.

Certainly the cooperation of these people, or at least an understanding of their needs and desires with regard to the land, is absolutely necessary if proposed land use plans are to be meaningful in any real sense.

Finally, the checkerboard pattern of land ownership is never considered. Again, this is not the fault of local BLM personnel, for there is no directive that it should be any part of the evaluation process. If the land holding pattern in the Red Rim area was such that there were large blocks of federal and private lands, then the effect of declaring one section unsuitable would not be so costly in terms of private coal resources lost. In such a case, large areas of private and federal land would still be available in logical mining units. In the Overland District, when one federal section is eliminated, four to six contiguous private sections are also lost. The cost of this in lost resources is enormous.

Conclusions

After analyzing the process that led to the Overland MFP revision, the only conclusion that can be drawn is that a fair application of the criteria cannot be accomplished with the information presently available to BLM. The stated purpose of the process is to eliminate only areas that are blatantly unacceptable. As we have seen, however, its practical effect is much different. Those who formulated and implemented the process were cognizant that this was only the first step in an elaborate method of land evaluation. As a result, the analysis they applied was superficial.

Unfortunately, their conclusions were superficial also. The process of applying these criteria is so riddled with flaws that it is difficult to see how it can be redeemed by any number of revisions. In light of the fact that an adequate data base does not exist and that there are subsequent safeguards to protect competing land uses, a more desirable alternative would be to place these lands in the "acceptable pending further study" category.

This country is currently facing a host of energy-related problems. The President and Congress have often stated that the development of coal could help to solve many of them. The BLM states in the MFP revisions, "The coal in the acceptable areas could assist the nation in becoming less dependent upon foreign energy resources and, at the same time, contribute to better air quality due to the very low sulphur and ash content." That there are benefits to be derived from the coal in this region is beyond question.

Whether the social and environmental costs of producing this coal are unreasonably high is another question. The BLM says that in large areas the answer is "yes". If this is the case, then all of the coal in Red Rim will be lost. These comments have shown, we believe, that BLM's position in this regard is unsupportable. Operating without sufficient data and in areas outside their expertise and scope of responsibility, where their conclusions were guesses at best, they classified areas as "unsuitable". If BLM is incorrect, and we contend the evidence shows

that they are, then vital coal will be lost senselessly unless the conclusions are reversed.

RMEC would suggest that the process, instead of ending arbitrarily through use of the "unsuitable" designation, be allowed to continue by classifying these lands as "acceptable pending further study". The advantage to this is twofold. First, it maximizes coal production by making certain that all decisions are based on the best available data. This method insures that no coal will be lost because of unfounded fears. Secondly, while coal production is maximized, it occurs at no cost to alternate land uses. A variety of safeguards exist to protect the water, fish, wildlife, etc. In some cases the BLM would make these decisions, in others it would be other federal or state agencies. The ultimate decision then would be a joint effort on the part of all agencies involved (BLM, OSM, EPA, Wyoming DEQ, etc.). Each would add their specific area of expertise, assuring that every potential concern is voiced, and every problem resolved. To designate an area as "acceptable" at this stage allows planning and data collection to go forward, without increasing risk. This is surely a desirable alternative.

RMEC is committed to the production of coal in an environmentally responsible manner. We share the concerns voiced by the BLM. We differ with BLM only in that we believe that, in most areas, we can reduce any harmful effects completely, or to a minimal, acceptable level. In every case we believe that more information will be helpful and that the

importance of producing the coal justifies seeking this information. We cannot overemphasize our objections to the MFP Supplement, or our determination to see that all the issues raised are given due consideration. The Red Rim project, standing alone, is highly significant. The impact of the BLM process on this single project is heightened by the fact that the haphazard exclusionary process we have discussed could easily affect many other equally substantial projects in the same way. We remain convinced that cooperation between industry and government can and will provide the public with a more productive and balanced coal management program.

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STATEMENT
PRESENTED TO
THE BUREAU OF LAND MANAGEMENT
ON THE
PROPOSED MANAGEMENT FRAMEWORK PLAN
FOR THE OVERLAND UNIT

by

WILLIAM H. BUDD, JR.
EXECUTIVE VICE PRESIDENT
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MARCH 22, 1979

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STATEMENT TO THE BUREAU OF LAND MANAGEMENT ON THE PROPOSED MANAGEMENT FRAMEWORK PLAN FOR THE OVERLAND UNIT

My name is Bill Budd and I am the Executive Vice President of the Wyoming Mining Association. I represent the coal, uranium, iron ore, trona, bentonite and several other mineral producing companies in Wyoming.

The purpose of the Bureau of Land Management, as I see it, is to administer the public lands in such a way that the highest use of the public lands are used and to protect the public domain for future uses. With regard to your unsuitability criteria, you have unquestionably designated 24 important considerations for preserving the public lands, and I certainly support the concept of taking good care of our resources. I was born and raised in Wyoming and I love the wildlife and scenic wonders of my state. There is, however, a serious problem in how you are using your unsuitability criteria and the potential result of your actions could be not only impractical, but irresponsible.

It is your job to use these unsuitability criteria so that unique and valuable lands are not lost, but the results of your actions appear to be to stop the development of our energy and mineral resources, which should be one of the highest priorities for our public lands.

With regard to the Management Framework Plans (MFP's) that you have designated for coal leasing, it appears that you have designated a very small amount of public domain for coal leasing and then you apply your unsuitability criteria on those small tracts to see how much of these high potential coal lands should not be mined. You designated the MFP's

designating high potential energy resource lands as the highest use for that land is irresponsible.

There are only two resources that allow any civilization to become powerful and healthy. They are the use of agricultural products and minerals. Without these two resources, civilization could not function and the civilizations that control these two raw products control other civilizations, as we can see from our history books, and as we can see today in the world politics. I only point this out to show that your job in administering the public lands is to assure that the highest use of the public lands are achieved and that our priorities for use of the public domain are not compromised. If the areas that contained high potential mineral desposits were so extensive that options were available, other uses of these lands may be justified. However, when the areal extent of our mineral potential is so limited, mineral extraction, and especially energy, should be the highest use of the public lands. There are many areas in Wyoming that are considered important for any or all of the criteria that have been designated as unsuitable. The BLM wilderness inventory lands alone comprise almost four times as much land as the strippable reserves of coal in Wyoming. I am not suggesting that other important values of our public lands be overlooked or disregarded. I firmly believe that where any of your unsuitable criteria exist on potential energy or mineral resource lands, that every effort be made to mitigate the conflicts, short of denying production of the resource.

critical wintering area for antelope and has been designated unsuitable for mining. Not only have 10,000 acres of federal land been designated unsuitable, but an additional 10,000 acres of private land will probably never be mined. The first sixteen years of mining by the company would have disturbed only 1,749 acres. This includes all haul roads, office buildings, tipple site, as well as the actual pit acres. Obviously, only a little over 100 acres per year would be disturbed. Almost 20,000 acres have been withdrawn when only a little over 100 acres per year would have been affected by mining. Even if this area is a critical winter area for antelope, compromises could be made which would allow for the area to continue to serve as a critical area and allow for mining at the same time.

I hope that the Bureau of Land Management will work to achieve the best use of the public domain in the future, but before the best use can be achieved, the BLM and other responsible agencies must establish priorities that reflect the true needs of this country and the future of the people. I realize that you are under a lot of pressure from many special interest groups, including mine, and the public-at-large, but if the public lands are to be administered in a responsible fashion, the BLM and other government agencies responsible for the public domain will have to set hard priorities and not allow every popular movement to sway them onto a new course.

I shudder to think of what would happen to my state if the United States lost all of its imports of oil. I believe the popular opinion would then be to get energy as fast as possible, and that could result in the worst possible impact upon the wildlife and scenic areas of Wyoming imaginable. I hope that you set the hard priorities that will allow our public lands to be used in the best possible way, and then hold fast to what is right, rather than popular only for the present time.

Thank you for your attention to my statement.

MACPHERSON, GOLDEN & BROWN
ATTORNEYS AND COUNSELORS
FIRST WYOMING BANK BUILDING
P. O. BOX [illegible]
RAWLINS, WYOMING 82301

JOHN A. MACPHERSON
T. MICHAEL GOLDEN
[illegible] BROWN
[illegible]

AREA CODE 307
TELEPHONE 324-6606

RECEIVED
MAR 26 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

March 23, 1979

Mr. Fred Wolf
District Manager
Bureau of Land Management
P.O. Box 670
Rawlins, WY 82301

Re: Red Rim/China Butte/Federal Coal Management Program

Dear Mr. Wolf:

This letter is written on behalf of Mr. Taylor Lawrence relative to the application of the unsuitability criteria under the new federal coal management program as applied to the Red Rim/China Butte area southwest of Rawlins.

To fully appreciate and understand Mr. Lawrence's present situation some background may be in order. As you are aware, Congress in 1862, as an inducement for the construction of a transcontinental railroad and in hopes such action would facilitate the settlement of the West, passed legislation conveying title to the odd numbered sections to the Union Pacific on either side of the railroad. The major portion of these lands were then sold by the railroad to private individuals with the railroad reserving the minerals. Mr. Lawrence is a successor in interest to the Union Pacific's lands located in the Red Rim/China Butte area. Mr. Lawrence purchased the property for use in his livestock operations and has continued the historic use his predecessors of interest made of the land; that is, the running of steers. Not only does Mr. Lawrence own the surface on every other deeded section within the Red Rim/China Butte area but is the holder of the federal grazing privileges of the public lands consisting of the even numbered sections, alternating between the patented lands under grazing licenses issued by the United States pursuant to the Taylor Grazing Act.

As a surface owner of every other section and the holder of the grazing license on the alternate federal sections any decisions relative to the leasing of the federal mineral will have an obvious effect on Mr. Lawrence's operation. As a consequence, we have reviewed with more than passing interest the application of the unsuitability criteria to the federal

checkerboard lands within the Red Rim/China Butte area. Application of the unsuitability criteria to the site specific has resulted in the obvious foregone conclusion that a major portion of the alternate federally owned properties should not be put up for federal coal leases.

We would submit that the unsuitability criteria themselves and in particularly the application of the criteria to the Red Rim/China Butte area fails to really address the unique situation presented by the checkerboard land pattern. That is, implementation of the unsuitability criteria as proposed and as applied in this situation fails to give proper consideration to the alternate federal-private ownership. The proposed land use decision talks about the coal reserves located on federally owned lands but fails to take into consideration that the true amount of economically recoverable and marketable coal is actually twice that discussed. The coal is not located solely upon federal lands but also upon privately held property. Because of the unique land pattern found in the checkerboard it is readily apparent that what takes place on federal lands will effect what is done on the private lands and vice versa what takes place on the private lands will effect what occurs on the federal lands. The two are just too inter-related to have any other result. However, despite this obvious interrelation of private and federal interest Mr. Lawrence, as the holder of the surface on the private lands, was never contacted prior to the issuance of the proposed decision applying the unsuitability criteria. He is now forced with having to formulate his position and comments in a period of less than two weeks when in fact his interest are equal to those of the federal government as it relates to the future use of the property in question.

Mr. Lawrence sincerely believes that because of the inter-mingling of private and federal lands a joint effort between the federal interests, the private mineral interest, and the private land interest should be effected thereby assuring the following:

1. The development of energy related resources
2. The protection of the environment
3. The assurance of proper reclamation

Only with the joint effort of all three interested parties can the ultimate objective of the above criteria be met. Failure of any one entity to work jointly with the other interests can and will result in the nonobtainment of the above objectives for all parties in interest.

Failure of the three ownership interests to jointly cooperate could and probably will result in some type of hopscotch development. While RME, the owner of the mineral estate, has indicated that coal development will not be affected if a federal leasing program is not carried out this may or may not, in the final analysis, be true. If it is not true than what Mr. Lawrence may expect is the development of coal reserves now owned by RME on the odd numbered sections. Thereafter it would be reasonable to expect by virtue of such development that unsuitability criteria as applied to the area could conceivably change the pending classification given to the land and the federal sections would be put up for lease. Coal development would then take place on the federal lands. The obvious interruption of such an unorganized development to Mr. Lawrence's ranching operations is obvious. Mr. Lawrence as the owner of the private surface is genuinely concerned about reclamation. However, he likewise recognizes that to forego the production of the coal deposits in the Red Rim/ China Butte area in our energy drained society should carefully be monitored.

Protection of the wildlife habitat seems to be all controlling in the application of the unsuitability criteria. However, let us submit to you what could happen if the joint efforts of all three interests are not unified. Mr. Lawrence has been considering the possibility of constructing a fence on his deeded lands and cultivating them to assure an increased grazing capacity. The construction of such a fence would have an obvious effect upon wildlife patterns within the area. This in and of itself may be reason enough to reconsider the application of the unsuitability criteria to the area.

It would appear that the application of the unsuitability criteria has resulted in a negative assessment of the area for three primary reasons. That is, air quality, reclamation issues and wildlife considerations. We would respectfully submit that these issues are under the present jurisdiction of OSM offices and the Wyoming Department of Environmental Quality. Based upon previous experiences these agencies have proven themselves to be well equipped to handle the problems involving such matters.

In conclusion we would respectfully submit that the application and the development of the unsuitability criteria to the checkerboard land area is inappropriate. We would further submit that the time within which the landowner has been permitted to comment has not be sufficient and that his interests have not been given proper consideration in light of the unique land pattern involved.

We would respectfully submit that the Red Rim/China Butte area should be classified as acceptable pending further study. Finally, we feel that the decision as proposed cannot be defended in Court which, we understand, is the directive under which the criteria was to be developed and implemented.

We appreciate having been given the opportunity, although somewhat short in time, to comment and sincerely hope that our comments will be considered.

Respectfully submitted,

John A. MacPherson

John A. MacPherson

JAM/sw

cc: Talyor Lawrence

BURTON W. MAR
370 No. 9
Laramie

Jan. 225 1979

Fred Wolf, Distroct Manager,
Bureau of Land Mgt. Dept. Interior
Rawlins District Office, Rawlins, Wyo. 82301

DearMr. Wolf:

This will acknowledge receipt of your letter and. add map concerning certain portions of Southwestern Wyoming Planning Units,- including the Red Rim/China Butte and Hanna Basin areas to be reviewed to determine areas acceptable for potential coal development and areas which are unsuitable for same.

Thank you for sending me this information and for the invitation to participate in the planning effort in the near future.

I am interested in these proposed studies, particularly that of the Hanna Basin area, with which I am quite familiar. I shall be glad to receive any further information you may have on these areas and the potentials involved, and with the help of others with whom I may be associated will endavor to br og some help to your office in making decisions as to your recommendation,s.

Sincerely yours,

Burton W Marston

Burton W.Marston, Secretary
Wyoming Division, IWLA

Copy to Green River Chapter, IWLA.

HALF CIRCLE CATTLE CO., INC.
1945 WESTWOOD HILL PHONE (307) 234-1200
CASPER, WYOMING 82601

RECEIVED
FEB 07 1979

February 6, 1979

Mr. Fred Wolf
District Manager
Bureau of Land Management
P. O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Wolf:

I am in receipt of your letter of January 25, 1979 with reference to the Red Rim/China Butte BLM claim.

I would appreciate your keeping me informed as to what progress is being made and what meetings are being held.

Sincerely,

M. T. Lawrence Jr.

M. T. Lawrence, Jr.
President

MTL:kf

P. S. Please note, my new address is: 1945 Westwood Hill, Casper, Wyoming, 82601. Phone No. 307-234-1200

RECEIVED
MAR 22 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

Sierra Club NORTHERN GREAT PLAINS OFFICE
PO Box 1078, Lander, WY 82520
March 19, 1979

Fred Wolf, District Manager
Bureau of Land Management
Rawlins District
PO Box 670
Rawlins, Wy. 82301

25

Dear Fred Wolf,

I would like to submit the following comments for the record on the application of lands unsuitability criteria to the Hanna Basin area and Red Rim-China Butte area.

First, I want to compliment your agency for its willingness to recognize that some portions of these areas are unsuitable for mining. It is incredible to think that the existing management framework plans for these areas would have allowed coal development in alluvial valley floors, along the shores of Seminoe Reservoir, next to the interstate highway and in eagle nesting sites. The fact that the BLM was able to find so many areas that are clearly unsuitable for mining illustrates the past gross inadequacy of the BLM's coal leasing process.

The supplements to these MFPs represent a good start at patching up the coal planning process--but I feel it is a false start as well. The Department of the Interior is still in the process of devising a coal management plan to satisfy the court order in the Natural Resources Defense Council v. Hughes case. The application of lands unsuitability criteria to coal lands before the criteria have been finalized and before the judge has approved the revised impact statement and lifted his injunction is a violation of the court order. (See attached notice from the case plaintiffs to Sec. Andrus.)

As well as being illegal, the premature application of the lands unsuitability criteria poses other serious problems.

1) The state has not been given adequate time to come up with "state lands unsuitable" (criteria 20) and "state proposed criteria", (criteria 21). How can the BLM apply the state criterion when the state hasn't had an adequate chance to promulgate them?

2) None of the criterion that are being applied in these MFP supplements have been finalized. The Sierra Club and others have recommended changes in and additions to the proposed criterion that appeared in the Federal Register and the draft environmental statement on the Federal Coal Management Program. The final criterion have not been adopted and released by the Secretary. So how can the BLM apply the criterion?

3) In many cases I don't believe the BLM has adequate inventory information necessary to apply the criterion. The criterion were first proposed to the public in December 1978. During the past three harsh winter months I can't believe that the BLM has had an adequate opportunity to survey the thousands of acres involved to judiciously apply the criterion. Some of the information necessary was gathered for the original MFP, but much of it is still missing.

4) None of the sites in either area were judged unsuitable due to unreclaimability (criteria 24). I find this hard to believe in light of the thin soils, low precipitation, and lack of proof of reclaimability in the coal basin.

5) Some information on how to apply the criterion is not available. For example, the Office of Surface Mining still hasn't finalized technical guidelines on how to identify alluvial valley floors. Without this basic information how can the BLM decide how large of an area around a valley floor to declare unsuitable?

6) The checkerboard land ownership pattern in the area poses a unique problem, but also a unique opportunity for resource managers. The BLM's approach to the problem is to make federal lands available to avoid by-pass and just survey federal lands for unsuitability. I believe the BLM has the responsibility to inventory the suitability and unsuitability of interspersed private and state lands and then designate federal lands unsuitable if such designation would effectively block development of non-federal lands that should be off limits. For example, if there is an eagle nest on private land the BLM should designate the surrounding federal parcels unsuitable so that it would be uneconomic for a developer to mine the private parcel. By refusing to recognize the interrelationship of these lands the BLM is facilitating environmental destruction of non-federal lands.

7) The preferred alternative in the draft EIS on coal management calls on the BLM to review all coal lands before focussing down on certain ones that might be acceptable to lease. By applying the criteria to the lands in these MFP supplements the BLM is undercutting and short-circuiting the preferred alternative and focussing on lands where industry has expressed an interest in leasing. This is a fall back to the old EMARS system, which was rejected by the public, the Carter Administration, and the courts.

Thank you for this opportunity to comment.

Sincerely,

Bruce Hamilton

Bruce Hamilton
Northern Great Plains Representative

Natural Resources Defense Council, Inc.

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RECEIVED
MAR 22 1979
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

February 15, 1979

The Honorable Cecil D. Andrus
Secretary of the Interior
U.S. Department of the Interior
Washington, D.C.

Dear Mr. Secretary:

On behalf of the Natural Resources Defense Council, Environmental Defense Fund, Northern Plains Resource Council, Powder River Basin Resource Council, plaintiffs in Natural Resources Defense Council v. Hughes, this will advise you that we believe the Department to be in violation of the final order of the court in that case, 437 F.Supp. 981 (D.D.C. 1977), as amended 454 F.Supp. 149 (D.D.C. 1978), appeal pending. Despite the court's explicit command to the contrary, the Department has chosen and begun to implement a coal leasing program long in advance of completion of the required Programmatic Impact Statement.

The Department's own memoranda reveal that the Bureau of Land Management (BLM) has initiated a systematic and vigorous program to prepare for a mid-1980 coal lease sale. 806,000 acres of land in four western states are being reviewed specifically and solely to prepare for coal leasing activity. Ten Management Framework Plans, prepared for coal leasing under the EMARS II system, are being updated using Lands Unsuitability Criteria never promulgated and published in the Draft Programmatic Impact Statement as draft criteria. This massive commitment to a 1980 lease sale is totally inconsistent with a decisional process purportedly focussed upon the Draft Programmatic Impact Statement.

The issue in NRDC v. Hughes was the adequacy of the final Environmental Impact Statement prepared on the Energy Minerals Activities Recommendation System (EMARS II). The Court concluded that the EIS was inadequate. It found both the explanation of EMARS II and the consideration of alternatives to be insufficient. The court specifically referred to the necessity that the Department consider the need for any leasing at all, and ordered the Department to prepare a new draft impact statement and the Secretary of the Interior to

> personally reevaluate federal coal leasing policy, based on information contained in the new final EIS, and to make a new decision as to whether a new leasing program shall be instituted and, if so, what kind of program it should be.

Natural Resources Defense Council v. Hughes, supra, 437 F. Supp. at 994 (emphasis supplied).

Until that task is complete, the Department is enjoined from taking "any steps whatsoever, directly or indirectly, to implement the new coal leasing program . . . ." 437 F.Supp. at 993.

As you know, plaintiffs subsequently agreed to language modifying the court's order, which was approved by the court on June 13, 1978. The order as amended permits the Department to

> prepare comprehensive land use plans as long as they do not recommend the leasing of any tracts of federal coal; however the plans can consider present and potential uses of the public lands.

454 F.Supp. at 152. The Department has apparently concluded that the court's order forbids only implementation of EMARS II and the identification or leasing of tracts. 43 Fed. Reg. 57663 (December 8, 1978); Memorandum from the Deputy Solicitor to the Director of the Bureau of Land Management "Planning and Data Collection Efforts under NRDC v. Hughes," at 1-2. Such a conclusion is incredible in the context of the decision of the court. The order of the court explicitly bars implementation of "the new" (emphasis supplied) coal leasing program; the point of the order is to compel the Department to properly complete the EIS process before it adopts, let alone implements, a new program, be it EMARS II or any other.

The language which permits land use planning to go forward is addressed to comprehensive planning which incidentally involves consideration of coal. Yet the Department has instituted planning activities the sole purpose of which is to facilitate the early renewal of coal leasing.

Almost a year ago, the Department instructed state Directors to direct "present work efforts into those planning units which offer the best opportunity for near future coal resource management," and emphasized that it "is particularly important that we place FY 78-79 emphasis towards meeting the mid-1980 objective for leasing, if required." Instruction Memorandum No. 78-157, March 27, 1978.

A few months later, an Office of Coal Management document identified

> 2.4 million acres in six western states which under existing planning criteria are suitable for coal leasing. These areas will require the least amount of effort to update and refine in accordance with the departmental policy and suitability criteria after July 1978.

Supplement to Planning and Budget for Coal Leasing 1978-1980, June 9, 1978, p. 2. The document discussed "a recommended approach for activity planning to meet the 1980 coal leasing goals," id., p. 1, and outlined specific steps to be taken. Id., pp. 3-5. The document repeatedly refers to production of a "Departmental policy on coal leasing by July 1978." Id., p. 1, also see pp. 2, 4.

It is significant that the document's authors contemplate the completion of the Department's coal policy in July 1978 (five months before the new draft EIS was even published). In a Memorandum dated June 30, 1978, the selection of the "Preferred Alternative" was announced. Memorandum from Executive Secretary "Secretarial Issue Document, Coal Policy Issues and Options." The Bureau of Land Management almost immediately began to implement the new policy.* In a memorandum addressing "Planning for Mid-80 Coal Leasing, If Needed," the Director of the BLM instructed the State Directors of Colorado, Montana, New Mexico, Utah and Wyoming, consistent with the "leasing strategies preferred by the Department," to complete all of the steps necessary for leasing, short of tract identification, by June 1, 1979:

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*/ It was not however full scale resource management which was initiated, but the limited coal oriented program months later referred to the DES in a cryptic section headed "Start-up Special Considerations" (DES, p. 3-28).

> The purpose of this memorandum is to stimulate the inventory and planning effort required to place the Bureau in the position of being ready to identify tracts to be analyzed by June 1, 1979, for coal lease offer in mid-1980 if needed.
>
> You have been furnished with the Solicitor's opinion of May 22 which provides legal guidance and advises we can develop plans under the court order of September 27, 1977, to the extent that we identify lands suitable for coal leasing in a planning unit.
>
> You have recently developed MFP's for some areas of medium or high potential for coal development in the last several years. High priority planning units have been identified to the task force on planning/budget, and additional funds for planning in FY 1979 have been requested. A number of coal-planning positions have been allocated to you during the last several years for continuing such efforts. We know the leasing strategies preferred by the Department will all rely on the surface management agencies' planning systems to identify areas suitable for coal leasing; this can be done by June 1, 1979.
>
> We would like to use the period of September 1978 through March 1979 to review and revise the areas planned for coal only in selected recently completed MFP's on high potential coal deposits, to insure that these plans are consistent with current Departmental policy and ready to use in developing the mid-1980 coal lease offer options. Doing this will involve the following steps, to be completed by March 1979[.]

Instruction Memorandum No. 78-381, July 19, 1978 (emphasis in original).

The process described in Instruction Memorandum 78-381 constitutes implementation of the "preferred alternative," and it is not a part of a general and comprehensive land use planning process. It is solely and specifically designed to prepare for a mid-1980 coal lease sale. IM 78-381 does not order consideration of coal resources in the context of resource management activities. It explicitly cautions the State Directors "to review and revise the areas planned for coal only . . . ." (emphasis in original). The 800,000 acres selected to be reviewed as part of this program have not been selected pursuant to comprehensive resource planning. There has been no intraregional evaluation of competing values. The criterion by which the selection was made was simple. "Focus on planning areas where completed MFPs delineate areas potentially suitable for coal leasing to meet short-term (1980) leasing goals." Supplement to Planning and Budget for Coal Leasing 1978-1980, June 9, 1978, p. 5.

After meeting with the State Directors, the Director issued further instructions specifying that the review and revision process should "include acreage sufficient to result in at least 10 potential lease tracts . . ." in each of four states. He added that the "exact process" for "a 1980 sale has not yet been designed. This is a major priority for the Office of Coal Management, in cooperation with OCLPC, over the next two months." Facsimile Message No. 78-85, September 21, 1978.

BLM State offices responded with a flurry of activity. The Colorado State Director advised the Director of BLM that although fiscal year 1978 was nearly over, leaving "a short time frame to complete the work," the Colorado State Office might "be able to update existing MFPs to allow for a subsequent coal-lease offer in mid-1980." This he attributed to the existence of "the West-Central Colorado Coal ES and Northwest Colorado Coal supplemental report covering the planning units where leasing is anticipated . . . ." He noted that "within these general areas, we have specific tracts identified." Memorandum from State Director, Colorado, to Director, August 7, 1978 (emphasis supplied).

The Montana State Director in three separate memoranda to the Director reviewed his plans to "facilitate an adequate supply of areas acceptable for further consideration for leasing" but complained that the "[t]imeframes for tract identification, selection, ranking, regional ES, and sales schedule are too compressed, but the situation is understood."

Memorandum from State Director, Montana, to Director, November 24, 1978, at 2-3. He noted that the need for haste might lead to "a less than adequate [regional environmental] analysis," Memorandum from State Director, Montana, to Director, September 26, 1978, at 1, and that it would be necessary to "rely heavily" on existing and possibly insufficient data. Memorandum from State Director, Montana, to Director, August 15, 1978, at 1.

A major step in preparations for a mid-1980 lease sale is the application of the draft Lands Unsuitability Criteria. See 43 Fed. Reg. 57662, et seq. (Dec. 8, 1978); 44 Fed. Reg. 2201-2202 (Jan. 10, 1979); DES, p. 5-141. Although the criteria are an integral part of the preferred alternative, they are being applied before they have been formally promulgated and fully exposed to public review and comment. The Department has characterized the application of the criteria as "test" and asserted that, because it can "change the MFPs if necessary to comply with the final regulations," the "process does not irretrievably or irreversibly commit any resources." 43 Fed. Reg. 57664 (Dec. 8, 1978).

The urgency of the Department's efforts to prepare for a mid-1980 lease sale renders that assertion ridiculous even if technically correct. Substantial changes in the criteria would require major revisions; major revisions that would have to take place during the summer and fall of 1979. The Department's planning documents state that in order for the mid-1980 lease sale to take place application of the criteria must be completed by April 15, 1979, Facsimile Message 78-85, September 21, 1978, p. 2, and revision of the MFPs must be completed by June 1979. See Instruction Memo 78-381, July 19, 1978. Thus, any meaningful change in the criteria would render leasing in 1980 impossible.

The consequence of the massive effort to be ready to lease by mid-1980 is that a coal leasing program is being implemented, once again without prior consideration of the need for and effects of leasing. However careful the analysis in the final programmatic impact statement may be, it will come more than a year too late. It is inconceivable that the program, already forging ahead on the tight schedule, with an enormous commitment of resources, will be cancelled or significantly modified in response to the comments.

Because of the demand for haste, the EMARS II process is still being used. The lands being reviewed are those subject to ten existing MFPs. Those MFPs were prepared and updated for use under EMARS II, not the sustained yield, multiple use mandate of FLPMA, or the environmental requirements of the President's Environmental Message and SMCRA. The data they provide was collected to answer questions asked under EMARS II, not the "preferred alternative." The decisions they reflect were EMARS II decisions, yet the Director of the BLM has instructed the State Directors that the updating process "should, in effect, confirm prior planning decisions or, if justified, include areas not previously recommended for potential coal development." Facsimile Message 79-4, to Colorado, Montana, Utah and Wyoming State Directors, Oct. 13, 1978, p. 1.

We regard the Department's actions as described above to be a violation of the court's order. The Department's memoranda and actions suggest that the decision to lease in mid-1980 was made before the basic tasks imposed by the court were addressed in a programmatic impact statement and subject to public review. These actions threaten to turn the programmatic impact statement into an effort to justify a decision to lease in mid-1980 rather than provide the Secretary with the options available for a federal coal leasing program.

As we stated in our comments on the DES, we believe that the general structure of the preferred alternative has merit as a resource management structure. We are eager to contribute to the Department's efforts to develop such a structure, but we believe that the activities we have identified in the preceding pages are undermining these efforts.

We would be very pleased to have an opportunity to meet with you to discuss our concerns.

Sincerely,

Jonathan Lash
pe. TB

Jonathan Lash For: Patrick Sweeney, Northern Plains Resource Council
Sarah Goren, Powder River Basin Resource Council
Paula Phillips, Environmental Defense Fund

cc: Guy Martin, Assistant Secretary of the Interior
Frank Gregg, Director, Bureau of Land Management
Steve Quarles, Director, Office of Coal Leasing Policy

Fred Wolfe

3-25-79

COMMENTS ON THE USE OF THE PROPOSED UNSUITABILITY CRITERIA ON FEDERAL COAL LANDS

The 24 points of recommended unsuitability criteria will affect private interest to the point that private land will not be able to be developed for mining activity; both underground and surface. The general appearance of the criteria seems to more directly affect surface mining activities than underground mining, although, no thought has been given to subsidence; and within the BLM it may be a major factor for allowing areas to be mined.

It is our opinion that subsidence in any mining areas would not significantly affect the points as listed as criteria.

With the great need for energy production in the United States to convert to other sources than foreign imports, there must be almost unlimited ability to lease energy containing federal lands in order for our free enterprizing system to keep up with demands. The most economic properties in this type of management must be mined first. This is determined by a bidding process between energy companies or individual power generation companies and individuals, not by the United States Government. We live in a free country and not a controlled, socialistic country.

The criterion on federal land systems should be worked around, as mining will not destroy the area forever with the available reclamation techniques. Mining may take a small area out of use for federal land systems for a short period of time, but then be returned to the system upon complete reclamation. This would make all natural resources available to this country in time of need.

The criterion on scenic areas is too far reaching, in that there are no definite guidelines as to how to determine if something is scenic.

The criterion on historic sites and natural areas should be handled in the same way the areas which are covered with water by large dams are.

The criterion on State listed endangered species should be limited to the Federal list, at least, and in most cases, these special would move to another area.

The criterion on Bald and Golden Eagle nests, roosts, and concentration areas; Falcon cliff nesting sites, should be reviewed in that when the birds increase in number, they must find new nesting areas. Thus, it is only logical that if we mine in an area, they could relocate nearby and, with the proper reclamation techniques, they could return to the area after mining.

The criterion on State resident fish and wildlife should be changed so that they would not shutoff mining unless reclamation could not be accomplished.

In the Eastern United States, rivers and creeks have been moved and diverted successfully without causing environmental problems. Thus, the resident fish could be saved and also dancing and strutting grounds for Sage Grouse, Sharp-Tailed Grouse, Prairie Chicken, winter ranges for deer, antelope and elk and migration corridors for elk could work around a mining area which is short duration.

All of these criterion could even adversely affect the installation of an underground mine because of roads to and from the mine site and outside facilities for the underground mine.

Reclamation of an area may not mean restoration to the original topography because other topography may be more desirable for wildlife and revegetation. This can be seen in areas of the Eastern and Central United States.

Carbon County Coal Co.
P.O Box 370
Hanna, Wyo. 82327

RE
MAR 26 1979
...ANAGEMENT
RAWLINS DISTRICT

1730 Miramont Drive
Fort Collins, Colorado 80524
March 22, 1979

Mr. Fred Wolfe
Bureau of Land Management
Rawlins District
P. O. Box 670
Rawlins, Wyoming 82301

Dear Fred:

After reviewing your "Proposed Revisions to the Overland MFP Land Use Decisions" and listening to the various presentations at our meeting on Friday, March 2, I have some serious reservations with regard to the tentative decisions that have been made. I hope you will consider the comments that I have enclosed with this letter. I have tried to view it not only as a scientist, but as an American citizen who is concerned with the limited supply of fossil fuels and the cost of those fuels.

Thank you very much for your consideration of these comments. I wish you the best of luck in your deliberations. I know it will be an extremely difficult task; and whatever the final outcome, no one will be completely satisfied.

Sincerely,

John L. Schmidt, PhD
Wildlife Biology

JLS:ew
Enclosure

March 22, 1979

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BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT

RESPONSE TO BLM'S PROPOSED REVISIONS TO THE OVERLAND MFP LAND USE DECISIONS

Introduction

As I have reviewed the revisions and specifically the unsuitability criteria, three general problems have been apparent. One relates to definitions, another to the value system defined by the criteria, and, lastly, to the apparent complete lack of consideration given to mitigation procedures.

The criterion relating to state resident fish and wildlife states that only "the most critical winter ranges for deer, antelope, and elk" will be considered unsuitable. Nowhere is "most critical" defined. I would interpret it as being a small part of the winter range as defined by the Wyoming Game and Fish Department. The Bureau of Land Management (BLM) apparently has included essentially all winter range into this "most" critical category.

If the criterion is concerned about deer or pronghorn as a species, certainly there is little cause to worry as I'll point out in the section "Impact on Species." However, BLM has apparently interpreted species to mean any herd or herd unit.

Regarding the value system defined by the criterion, numerous economic studies have been conducted on the value of wildlife species, particularly on big game. While these values are considered high by most standards, they generally would not compare favorably to values for the several million tons of coal which may underlie part of their habitat. Furthermore, as energy resources become more precious, these values will likely increase faster than those of wildlife. The unsuitability criteria leave no room for compromise, however. In effect, someone has made the decision that one kestrel is more valuable than all of the coal underlain within a 1/4 mile radius of its nest. I'm not sure most Americans would agree with this value judgment, especially when there is no heat in their home.

Lastly, it is obvious that virtually no thought has been given whatsoever to mitigation procedures. A considerable amount of research has been conducted which deals with habitat improvement techniques which may prove to more than mitigate short term loss of wildlife habitat through mining activities. The subject will be covered in greater detail in the section "Potential Mitigation Procedures."

BLM's Data Base

I have briefly reviewed BLM's techniques for gathering data relating to wildlife species. Generally, I have more confidence in their data relating to raptors than to their big game information. Certainly the criteria dealing with migratory birds, bald and golden eagle nests, and falcon cliff nesting sites are more specific than that pertaining to state resident fish and wildlife. For example, a golden eagle nest is relatively easy to find and determine whether or not it is active; this is a yes or no, black or white situation. However, to determine whether any given habitat is essential to the existence of a species, or if it is "most critical" winter range (especially when these terms aren't defined) is infinitely more difficult.

I have not seen a detailed description of BLM's methodology for determining that "most critical" winter range exists for pronghorn and mule deer in the area. As I understand, several aerial flights were made over suspected concentration areas and several hundred animals were counted. This number was then divided by the estimated number of animals in the herd unit to arrive at the percentage of the herd unit believed residing on the proposal area. There are many possible sources of bias in this technique.

Pronghorn normally are harassed by low flying aircraft and may run for a considerable distance. Any experienced observer would agree that its' not unlikely that the same herd may be counted two or three times even though the sample strip may be a half mile apart. Furthermore, since standard statistical procedures were not employed, there is no estimate of variability, and confidence limits cannot be placed around the estimate. A second source of error is the technique used to estimate population size for the herd unit. I know what techniques are employed by the Wyoming Game and Fish Department. The estimates are very rough at best. Since the technique is not statistically valid, again no confidence limits can be placed around the estimate. If the same census technique had been used for the entire range of the herd unit and the Red Rim, China Buttes area, more confidence could be placed in the percentage of herd unit residing on the proposal area. However, this was not the case.

I see no data indicating it is even known for sure the animals inhabiting the proposed site are even part of the herd unit in question. This is only an assumption. Frequently when such assumptions are tested, they are found to be false. The only way this can be verified is by conducting migration studies of the herd in question. A few animals from selected areas of the summer herd unit range would need to be marked with colored collars or radio transmitters and their movements studied through the course of the winter.

This is not to say the area is not an important wintering area for pronghorn. It may well be. However, because of the manner in which the number of animals in the herd unit and the number of animals in the proposal area were estimated and the lack of data relative to herd migration, definitive statements concerning the relative importance of this area to a particular herd are not possible.

Possible Mitigation Procedures

As indicated earlier, little obvious effort was made to consider mitigation procedures. I would like to point out several techniques that could and should have been given more consideration. Because of time constraints, I will not go into details at this time. However, a thorough literature review would reveal that the mitigation of many of these techniques have been quantified for some species in selected habitat types. The following are techniques that should be considered:

1. Fertilization of areas adjacent to the mining site could be used to increase productivity of forage and thereby increase carrying capacities for big game.
2. Application of charcoal to snow has been used experimentally to reduce snow depth to allow big game access to forage.
3. Snow fences also have been used to keep forage areas normally exluded to big game open during severe winter storms.
4. Supplementary feeding on areas adjacent to mine site could be used. This technique has been used for years in Wyoming to increase the natural carrying capacity for big game.
5. Underpasses on railways and haul roads have been proven to significantly reduce accidental mortality.
6. Mineral needs may be supplemental with "salt" blocks.
7. Water catchments have been used to better distribute big game at all seasons of the year to avoid range depletion around watering holes and to increase carrying capacity.
8. Artificial raptor nests and perches have been successfully used in several areas to increase raptor numbers where natural nests and perch sites do not exist.

9. Livestock numbers could be reduced which would increase the carrying capacity for big game.

These are some examples of mitigation techniques that should have been considered. Additional effort would likely reveal other possibilities.

Impact on Species

The impact of mining on wildlife species seems to have been greatly exaggerated as a result of the federal unsuitability criteria. The assumption appears to be that the wildlife existing on the area will be totally eliminated forever should mining occur. I would like to briefly comment on the anticipated effect on wildlife on the short and long term.

1. Short term. Certainly there will be complete habitat destruction on the short term. However, it is important to note that at any one time a relatively small percentage of the total area will be so disturbed. The remainder of the area will be either undisturbed or in the process of being reclaimed. Many species respond quickly to the reclaimed land. For example, I have seen pronghorn foraging in a reclaimed area within a year after reclamation was begun.

   Considering the short term impacts to most species, the impact is almost miniscule. For example, in North America the most recent estimate of the pronghorn population is 400,000. Let's assume that there really are 1,000 pronghorn wintering in the proposed area as BLM estimated and that all die because of lack of forage, no mitigation, no reclamation, and they wouldn't move to a different area. This would only constitute one-fourth of one percent of the population! Considering the population in the State of Wyoming, this would still constitute less than one percent of the population. Through mitigation,

   reclamation, and temporary movements of animals away from the mine site, even this minor impact should be greatly reduced. The same general impacts should hold true for other wildlife species in the area, including raptors, mule deer, sage grouse, and waterfowl.
2. Long term. With proper reclamation, the long term effects on wildlife species should be negligible. If the topography is contoured to its original shape and native vegetation can be re-established, the wildlife species should be maintained at, near, or perhaps above current population levels. One exception to this may be nesting sites for some raptorial birds. I don't know and I'm not sure if anyone does know how specific are their needs relative to rock outcroppings and other unique geologic features or the state of the art with regard to reclamation of such features.

Summary and Recommendations

There is considerable room for doubt in BLM's "Revision to the Overland MFP Land Use Decisions." The inadequacy of big game census techniques, methods used to determine "most critical" winter ranges, lack of consideration of mitigation procedures, minor or negligible impacts on species, among other reasons cast numerous questions on the wisdom of these decisions.

I recommend beginning as soon as possible in conducting a research project to estimate the population size of the total big game herd unit and the migration and concentration patterns at all seasons of the year using statistically valid procedures. In addition, steps should be taken immediately to begin implementing mitigation procedures to establish that productivity of these ranges can be increased for big game and, furthermore, that an increase of winter carrying capacities can be demonstrated. Mitigation procedures for other wildlife of interest, such as sage grouse and raptors, should also be started soon to establish their reliability.

John L. Schmidt, PhD

PALM LIVESTOCK CO.
ELK MOUNTAIN, WYO. 82324

26 March 1979

State Director (912)
Bureau of Land Management
Box 1828
Cheyenne, WY 82001

Dear Sir:

Thank you for the opportunity to submit these comments on your proposed supplements to the Wyoming Land Use Decisions. (re: coal development on BLM administered lands in the Hanna Area and the Overland Area of the Rawlins District). I do so hesitantly and guardedly--because most coal development so far accomplished in this district has been on lands grazed by Palm Livestock Co. The surface owner-strip mining problems that have arisen have been ours, with no known expertise available or precedent to guide us.

I can write comfortably with the advantage of having heard your presentation and the testimony it drew in Rawlins Thursday evening 14 March 1979. My initial reaction was as negative as is your approach to decision-making.

We have studied today's problems in this area since Arch erected the first drag-line nearly a decade ago. We don't know all the answers yet--nor will we ever; but the nation has chosen coal as the first alternative to imported petroleum energy. Our experience should at least permit us to simplify our logic.

"Energy efficiency" has become a household phrase--the 55 m.p.h. speed limit; well insulated houses; car pools; and turning the thermostat down. Synonimous to patriotism, it should also apply to mining techniques. If we are going to live on this planet as long as we want to, we are going to use all of the energy we can find. Every ton of coal we can extract from the earth will be burned, and we would be wise to extract it efficiently.

There lies the fallacy of your decision-making process. If development of these coal reserves is national policy, the BLM should encourage their orderly development with positive decisions and positive criteria--not screen potential development with 24 "unsuitability" criteria. Your efforts should be orchestrated with those of the Department of Energy to the cadence of national policy, once established.

"Highest and best use" of the land is the goal we set; shouldn't we assign some of our priorities to economic considerations?

I await your answer in the decisions you apply to Hanna and to Overland.

Respectfully,

[illegible]
President

HP:dpj

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Kelly
APR 13 1979
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RAWLINS DISTRICT

THE STATE OF WYOMING
ED HERSCHLER
GOVERNOR

Game and Fish Department

CHEYENNE, WYOMING 82002

EARL M. THOMAS
DIRECTOR

April 12, 1979

Fred Wolf, District Manager
Rawlins District Office
Bureau of Land Management
P. O. Box 670
Rawlins, Wyoming 82301

EIS 236: Supplement to
Wyoming Land Use Decisions
Determinations of Unsuitability
for Coal Development-Hanna Area

Dear Mr. Wolf:

Having reviewed the Management Framework Plans Supplement for the Hanna Planning Unit, we feel that BLM has properly applied the unsuitability criteria for coal development in the area. We concur with the proposed 2,000-foot buffer zone proposed along Seminoe Reservoir, the Medicine Bow River, and Austin Creek.

We realize that ongoing work by BLM and the Wyoming Game and Fish Department will improve our knowledge of wildlife distribtuion and critical habitat, and may result in delineation of additional unsuitable areas for mining. It appears at this time that consideration for wildlife is in line with existing data under the current criteria.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

W. Donald Dexter

W. DONALD DEXTER,
ASSISTANT DIRECTOR
WYOMING GAME AND FISH DEPARTMENT

WDD/HBM/mlr

cc: Game Division
Fish Division

NOTE: This comment is for the Hanna review area only.

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Game and Fish Department

CHEYENNE, WYOMING 82002

EARL M THOMAS
DIRECTOR

April 9, 1979

EIS 237, Red Rim/China Butte
Coal Unsuitability Review
Area

Mr. Fred Wolf, District Manager
Rawlins District Office
Bureau of Land Management
P. O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Wolf:

We offer the following comments on the proposed coal leasing being considered in the proposed Land Use Decision Changes for the Red Rim/China Butte Area.

Critical Habitats

Habitat known to be critical to the maintenance of resident populations of pronghorn antelope, mule deer, and sage grouse is delineated on the map attached. This does not differ greatly from habitat known to the Rawlins office of the Bureau of Land Management.

Critical habitat for pronghorn within the coal lease area consists of a winter range along Red Rim north and east of Separation Creek, and a significant portion of the Muddy Creek Winter Range west of China Butte. Observations during the winters of 1977-78 and 1978-79 indicate that the Red Rim Winter Range is essential, due to its topography and vegetative cover, for the survival of 600-1,200 animals (9-18%) of the Baggs antelope herd. That portion of the Muddy Creek critical winter range included in the China Butte lease supports 50-600 pronghorn, up to 7% of the Baggs antelope herd.

Only a small portion of the coal lease area near China Butte is considered critical winter range for mule deer. However, this range supports an estimated 120 mule deer, approximately 1% of the Baggs mule deer herd. A smaller proportion of the population winters on Red Rim, but the rim is not essential winter range for a large proportion of the herd.

Two sage grouse strutting grounds are known to exist in the coal lease area. The existence of these grounds in an undisturbed state is essential to the maintenance of associated sage grouse populations. Sage grouse populations also require

nesting and brood-rearing habitats near each ground. Further study will be required to delineate these habitats, but protection of sagebrush draws and riparian meadows should allow sufficient reproduction to sustain sage grouse numbers. A one-quarter-mile buffer is recommended on each side of major streams in the coal lease area to maintain sage grouse nesting and brood-rearing habitat. An estimated 300-400 sage grouse winter in the northern portion of the coal lease area along the southern portion of Separation Creek or along Red Rim. Current data are insufficient to delineate critical sage grouse winter ranges.

There are at least two active golden eagle nests, three active falcon nests, and numerous nests of other raptor species in the coal lease area. Most of these are located along Red Rim or China Butte. According to Lands Unsuitability Criteria #11 and #13, federal lands within a quarter-mile radius of each of these nests shall be considered unsuitable for coal mining. We believe that protection of this type around each American kestrel nest is unreasonable and should be deleted.

Impacts on Important Wildlife Species

If all the coal beds in this lease area were mined, the State of Wyoming could lose approximately 24% of the Baggs antelope herd, 1% of the Baggs mule deer herd, and at least two sage grouse populations. The economic and recreational importance of these species to the State qualifies their critical habitats as unsuitable for coal mining under Criterion #15 of the Lands Unsuitability Criteria. BLM's present delineation of federal lands considered unsuitable for coal mining should adequately protect critical habitat for pronghorn and mule deer if private lands within the delineated areas are not mined. Present delineations may not ensure protection of critical sage grouse habitat.

If coal beds within areas determined to be suitable for coal mining are mined, there will be losses of summer range for pronghorn and mule deer. Successful reclamation will reduce these losses. Mitigation of the loss of summer range by habitat improvements in adjacent areas should be considered.

Mitigation and Stipulations

Although the vegetation types in the critical winter ranges are not unique and can be found outside the proposed coal lease area, the topography of these ranges is unique and essential to the maintenance of populations of resident pronghorn, mule deer, and sage grouse. The varied topography of the Red Rim and China Butte regions provides cover for these species during severe winter storms. Ridges in this area are frequently blown clear of snow, making forage available when it may not be available elsewhere in the region. For these reasons, the habitat on these critical ranges cannot be replaced and mitigation for antelope has not been demonstrated in Wyoming.

All or portions of these critical winter ranges cannot be sacrificed. While the rough and varied terrain of Red Rim ensures that some forage will be available to pronghorn during periods of deep snows and strong winds, the tall vegetation along Separation Creek is needed by these animals during periods with moderate snowfall and little wind when ridges are not blown free of snow. Under severe weather conditions, these pronghorn have concentrated in either the southern or northern portions of the critical winter range, indicating that neither portion can be sacrificed for coal mining without threatening the survival of most of these animals.

The ability to mitigate losses of pronghorn or mule deer critical winter habitat and thereby maintain approximately the present population levels over the long-term has not been demonstrated anywhere in the Southcentral Wyoming coal region. Possible mitigation measures can be divided into three categories; reclamation, improvement of adjoining habitat, and artificial supports.

Successful reclamation of both topography and associated vegetation presently found on the Red Rim and China Butte critical winter ranges for pronghorn and mule deer has not been demonstrated to be feasible. Efforts at reclaiming wildlife habitat after strip mining have been in progress in this region of Wyoming for several years, but, to date, the Wyoming Department of Environmental Quality has not released any of these areas as being successfully reclaimed, let alone reclaimed to wildlife habitat. Requiring that this land be reclaimed to pronghorn and mule deer winter habitat would make reclamation of these sites more difficult. If, in the future, the mining industry can demonstrate satisfactory reclamation of winter habitat for these species in areas with similar climates and physical features, then reclassification of federal lands within the Red Rim/China Butte critical winter ranges as suitable for coal mining would be acceptable.

Improvement of habitat near the mining area has been considered as a method of mitigating loss of winter habitat for pronghorn and mule deer. Habitat improvement techniques would include fertilization, irrigation, and modification of livestock grazing. The objective of these techniques would be to stimulate browse production. Each of these techniques, or combinations of the three, would probably increase the total number of kilograms per hectare (pounds per acre) of browse forage. This would not, however, ensure an increase in the available browse for pronghorn or mule deer during crucial winter periods. Snow depth on or around the improvement areas may prevent these game animals from consuming any of the added forage. As already stated, the topography of the Red Rim/China Butte critical ranges is largely responsible for their critical nature. No similar topographic features are available in the region to provide needed cover and windswept slopes during severe winter periods.

The possibility of improving browse production on portions of any critical winter range and mining other portions exists, but, as stated earlier, under different weather conditions, different protions of these winter ranges are utilized. Sacraficing the wrong portion at the wrong time could have the same impact as sacrificing the entire range, regardless of any habitat improvements

Two methods of artificially maintaining the pronghorn wintering on Red Rim are possible. The first would involve herding these animals to suitable winter ranges. Trapping operations have shown that using helicopters is the only practical method of moving pronghorn in a desired direction. However, trapping operations involve only dozens of pronghorn, nowhere near the problem posed by trying to move and direct 600-1,200 pronghorn. The nearest winter range that might support added animals is southwest along Muddy Creek. This would require herding the pronghorn at least nine miles, and some groups would need to be herded over 20 miles. Herding operations would presumably only be implemented when severe winter conditions concentrated the pronghorn on the Red Rim Winter Range. Herding would require moving these animals through several miles of deep snow at a time when they are already under severe stress or weather conditions might prevent herding until after it was too late to save a large number of pronghorn. The associated mortality and loss of future reproduction could be more damaging than coal mining on the site.

The second potential method of artificially maintaining pronghorn populations is supplemental feeding during severe winters. Supplemental feeding of pronghorn is not a viable substitute for winter habitat, nor is it acceptable mitigation for habitat losses. Numerous problems encountered in the pronghorn feeding operations undertaken by the Game and Fish Department during the winter of 1978-79 would reoccur in any supplemental feeding operations attempted on Red Rim. Since feeding operations would probably not be required every winter, when it became apparent that the winter was severe enough to warrant supplemental feeding, a large portion of the associated mortality and stress on the pronghorn herd would have already occurred. Observations of Red Desert pronghorn during the winter of 1971-72 indicated a significant number of these animals died within two weeks after the first major storm of the season.

A number of problems must be considered in addition to those of quickly organizing, equipping, supplying, and financing the feeding operations. First, it is necessary to locate the surviving pronghorn, which are usually scattered over remaining available critical winter range. This requires aerial surveys that are difficult during much of the winter due to storms and strong winds. The second problem involves gaining access to these scattered groups. Snow vehicles and aircraft would probably be required, and these cannot be used during some storms.

A third obstacle is keeping the pronghorn where the food is. These animals habitually move away from storms until they find an area in which they can survive. Pronghorn have been known to succumb to hypothermia even when in good physiological condition, and without protective cover many die regardless of how much they are fed. If the protective topography along Red Rim were removed or sufficiently altered, the pronghorn would probably not remain there. They would instead move in whichever direction the winds pushed them. Prevailing winter winds are from the west and southwest, so these animals would probably aggregate along fences on the south side of Interstate 80 and the southwest side of Rawlins. Heavy mortality would be expected due to fences, roadkills, and domestic dogs.

Losses of summer range for pronghorn and mule deer might be mitigated by reclamation and habitat improvements on adjoining lands. Feasibility of various mitigation methods will need to be evaluated lease-by-lease in the region.

Federal land which contains a sage grouse strutting ground or is within at least one-quarter mile of a strutting ground should be designated as unsuitable for coal mining. Loss of strutting grounds for sage grouse cannot be mitigated, and techniques for inducing sage grouse to relocate these grounds are still in an experimental stage. If, at a later date, research demonstrates that these strutting grounds can be moved sufficient distances to allow mining, reclassification of that land as acceptable for coal mining should be considered, with the restriction that each strutting ground must be successfully moved off-site before any land within the buffer zone is disturbed by mining activities. Mitigation of nesting and brood-rearing habitat losses may be possible through habitat improvement. Federal lands within a two-mile radius of any strutting ground should be classed as "acceptable pending further study" to allow delineation of sage grouse nesting and brood-rearing habitats.

Falcon and eagle nesting sites probably cannot be mitigated through either reclamation or habitat improvement, but recreation of nesting sites or moving nests may be possible. Stipulations regarding timing of construction may be necessary in order to prevent abandonment of these sites as a result of mining.

Roads and railroads accessing mines will have to be addressed in specific mining plans. These access routes should not cross critical ranges, should lie outside the quarter-mile or mile buffers around active falcon and eagle nests and major streams, and should be either unfenced or fenced in such a manner that wildlife movements are unrestricted.

Thank you for the opportunity to offer these comments in the interest of the wildlife resource.

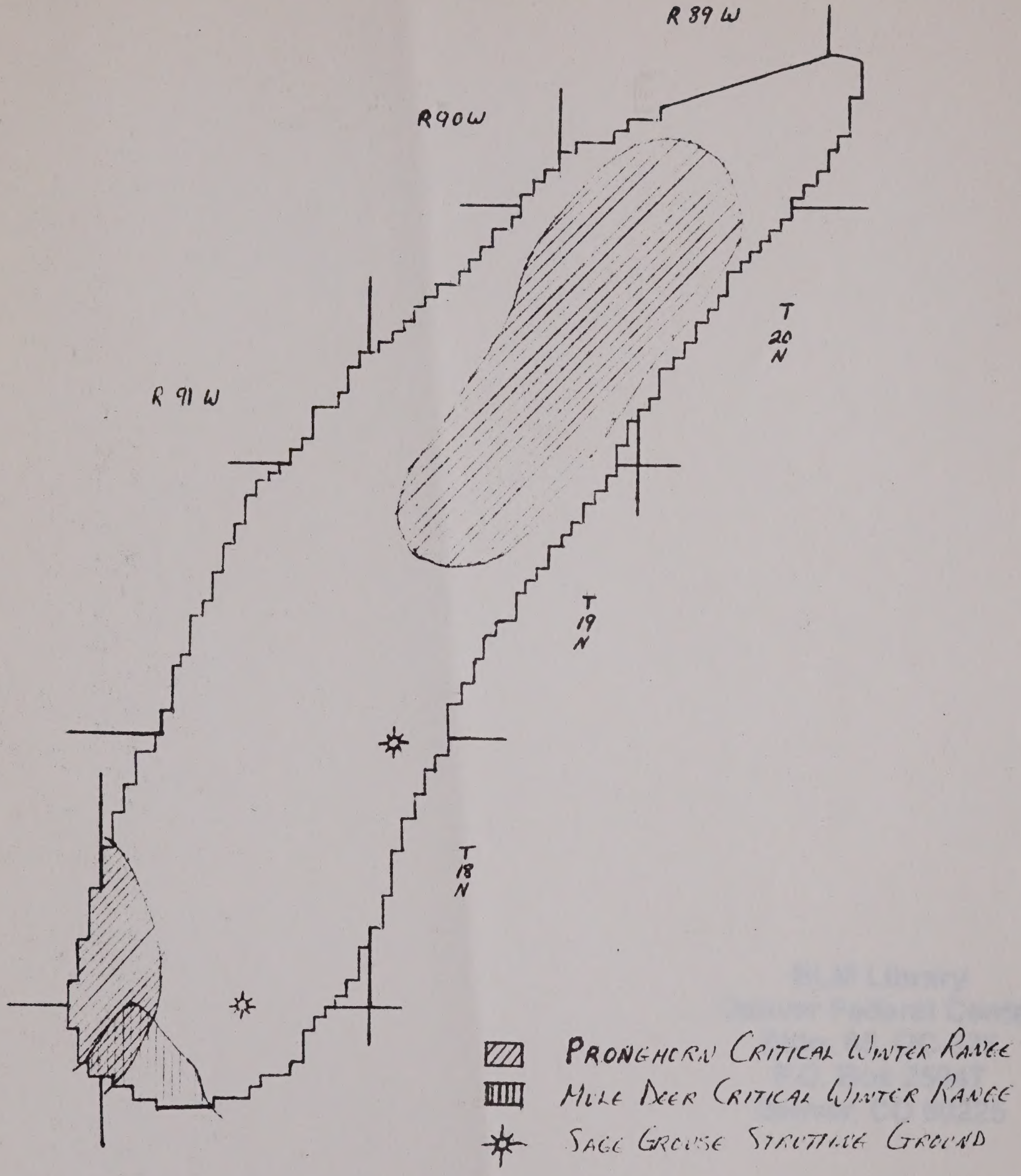
Sincerely,

W. Donald Dexter

W. DONALD DEXTER, ASSISTANT DIRECTOR
WYOMING GAME AND FISH DEPARTMENT

WDD/HBM/mlr
atch.
cc: Game Division
Fish Division
State Planning Coordinator

Red Rim - China Butte Coal Lease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▨ Pronghorn Critical Winter Range
▥ Mule Deer Critical Winter Range
☼ Sage Grouse Strutting Ground

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